10+2+3
PATTERN
PHILOSOPHY
PROGRAMME

DEVELOPMENTS IN INDIAN EDUCATION

A. BISWAS
J.C. AGGARWAL

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(Developments in Indian Education)

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A. BISWAS
Joint Director of Education
Directorate of Education, Delhi

&

J.C. AGGARWAL
Education Officer
Directorate of Education, Delhi

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PREFACE

Education has to be related to the life, needs and aspiration of the people so as to become a powerful instrument of social, economic and cultural transformation. And for all this the first step is to have a national agreement, a national resolution, a national frame of reference on all basic problems of education. In this context, one of the important principles laid down to promote the development of education in the country is the adoption of the broadly uniform educational structure of 10+2+3 in all parts of the country.

To limit our understanding to mere structuring reform would not be a fair deal to the 10+2+3 pattern and all what it implies.

An attempt has been made here to give the historical perspective, philosophical content and programme of implementation of the reform. It is hoped this publication would go a long way in lending a clear vision and greater conviction for adopting it as an effective tool for the desired educational revolution in the country.

This is perhaps the first attempt to collect all pertinent material on the subject so as to enable one to see the pattern in a broader perspective. Obviously a first attempt may not be free from some limitation. Nevertheless it is felt this should prove useful to all those who are concerned with educational reforms in our country.

August 15, 1974

A. BISWAS
J. C. AGGARWAL

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Chapter 1

The New Pattern

The restructuring of the educational system uniformly throughout the country is a drastic reconstruction, almost a revolution. To limit our understanding to a mere structural reform would not be a fair deal to the 10+2+3 pattern and all what it implies. The historical perspective and the philosophical content of the reform would lend to a clearer vision and a greater conviction for adopting it as a national tool for educational revolution.

The New Educational Structure is laid down in the "National Policy on Education 1968". It reads : "It will be advantageous to have broadly uniform educational structure in all parts of the country. The ultimate objective should be to adopt the 10+2+3 pattern, the higher secondary stage of two years being located in schools, colleges or both according to local conditions". In other words it would mean that formal education between the beginning of primary classes to the end of the first degree course will last 15 years. The first 10 years of schooling will include the primary and the lower higher secondary classes. The next stage will be the higher secondary stage of 2 years which will either be attached to the 10-year school or to a college. A complete secondary education will consist of 12 years. The 2-year higher secondary stage will lead to a 3-year degree course. This is the broad outline of the pattern to be uniformly adopted all over India It should be the endeavour of every State and Union Territory to implement the national policy as early as possible, because "it will be advantageous" to the nation, as it will accelerate the process of educational reconstruction.

With the attainment of independence the education of new India deserved a fresh look. This need was appropriately stressed by Pandit Jawaharlal Nehru, the then Prime Minister of India, in his inaugural address to the Central Advisory Board of Education in 1948 : "Great changes have taken place in the country and the education system must also be in keeping with them. The entire basis of education must be revolutionized". The Education Commission, after about 19 years of independence, re-echoed the same concern: "In fact, what is needed is a revolution in education which in turn will set in motion the much desired social, economic and cultural revolution." The call for educational revolution continued in the intervening period of about two decades as would be found in the recommendations of the University Education Commission (1948-49) and Secondary Education Commission (1952-53), reports of advisory bodies and expert committees and proceedings of important conferences and seminars. They have shaped and reshaped the progress of education, as the Government and the people at various levels got themselves involved in this task of great reconstruction.

A wide and distressing gulf, however, continues to persist between thought and action, between advice and its implementation. The piecemeal reforms here and there, in this State or that State do not bring about an educational revolution unless the whole of India has an inescapable feeling and firm conviction of moving nearer to the realization of the national goals. For this purpose, education should be developed so as to increase productivity, achieve social and national integration, accelerate the process of modernization and cultivate social, moral and spiritual values. Education has to be related to the life, needs and aspirations of the people so as to become a powerful instrument of social, economic and cultural transformation. And for all this the first step is to have a national agreement, a national resolution, a national frame of reference on all basic problems of education.

Even before independence and especially thereafter a demand has slowly grown in all parts of the country that there should be a national system of education or at least a national educational policy with certain common goals and basic programmes. But education is a 'State' subject. On the one hand, the desire of a national policy born out of a national concern in education and on the other hand, the realization of the lack of constitutional authority to implement it adds a unique poignancy to the situation. Indian education has undergone a variety of experience regarding central control. Education was highly centralized after the Act of 1833, but it became largely decentralized from 1870 till 1919, the year when the Government of India Act completely decentralized education. With the adoption of the Constitution in 1950 the Government of India obtained some authority over education. This trend towards centralization was supported by two factors, *viz.*, the formulation of 5-year Plans and the institution of central grants.

In 1967, after 20 years of freedom, it was felt urgent to issue a comprehensive resolution on national policy of education. The time was opportune as the *Report of the Education Commission (1964-56)* was before the country. In 1968 the Government of India issued a resolution on the National Policy on Education. The resolution reads: "The Government of India is convinced that a radical reconstruction of education on the broad lines recommended by the Education Commission is essential for economic and cultural development of the country, for national integration and for realising the ideal of a socialistic pattern of society. This will involve a transformation of the system to relate it more closely to the life of the people; a continuous effort to expand educational opportunity; a sustained and intensive effort to raise the quality of education at all stages; an emphasis on the development of science and technology; and the cultivation of moral and social values. The educational system must produce young men and women of character and ability committed to national service and development. Only then will education be able to play its vital role in promoting national progress, creating a sense of common citizenship and culture, and strengthening national integration. This is necessary if the country is to attain its rightful place in the comity of nations in conformity with its great cultural heritage and its unique potentialities."

In this context, one of the principles laid down to promote the development of education in the country is the adoption of the broadly uniform educational structure of 10+2+3 in all parts of the country.

Thus the structural reform is closely linked with other reforms embodied in the '*National Policy on Education 1968*'. The new pattern without its proper perspective – the complete theme of development—would be meaningless. To deal with it alone would be playing with the structure without the substance with the container without the content. Viewing from another angle it may be said that the substance or content, however important, must remain dependent to the structure or container that holds the content for its proper preservation, better utilization and maximum effectiveness.

The educational system differs from country to country, but the most obvious difference that first meets the eye is the structure, the way in which the school and collegiate education are divided into different stages of educational process. Even within the school stage there are varieties of structural arrangements. Some have a simple unitary pattern of 10, 11 or 12 years of schooling leading directly to higher education but supplemented by vocational education or facilities from tenth grade onwards for those who do intend to proceed to higher education. Some have parallel patterns of general and a variety of vocational education in different types of schools just after ending a relatively short period of primary education. Between these two extreme types, there exist a variety of structures in different combinations. One may ask : "Is there, then, any ideal type of educational structure that can be copied as a model ?" It is difficult to answer the question beyond saying that some patterns are more suitable for certain purposes under certain circumstances than are others. Or, it may be found that some patterns are not relevant to the existing factors like the content of curriculum, the teaching methods and materials, the competence of teachers and to the proposed educational objectives. The Chapter : "Global View of Educational Patterns" provides a comparative evaluation and endeavours to discover answers to certain pertinent questions regarding patterns.

One question may be relevant now : "How do we know that the 10+2+3 pattern is the best under the present circumstances ?"

Or more critically : "Is it not confusing that once the Secondary Education Commission got the Intermediate Stage abolished in favour of a Higher Secondary then considered as the best pattern, and now we are being told to get the Higher Secondary Stage abolished in favour of an Intermediate Stage as the best considered pattern ?" To reach the answer to such questions which nevertheless appear pertinent, "The Philosophy and Purpose of the Pattern" (Chapter 2) and "A Historical Perspective" (Chapter 3) may be found very helpful. A passing reference may be made that experience with old patterns, the new social and economic demands, the national educational goals that we pursue have made it urgent to have this pattern uniformly all over India. The 2-year Intermediate Stage, as now existing in Uttar Pradesh, is intermediate to 10 years of schooling and 2 years of first degree course. It is the 10+2+2 pattern of 14 years. The Secondary Education Commission recommended a rearrangement of 11+3, the total duration remaining the same. The new 10+2+3 pattern is not just reverting to the old pattern. It raises the total period of education before the award of the first degree by one year.

The number of existing educational structures as exhibited by the States and Union Territories is quite big, if not frightening. A simplified way of understanding them is to classify the structures broadly into two groups according to their duration. The first group of structure will require 15 years or more to obtain the first degree in general education. The four states of the South-Western region of Maharashtra, Gujarat and the Eastern region including Bihar and Orissa but excluding Bengal, Manipur and Tripura will fall in this group. The second group of structures will require 14 years to obtain the first degree. The remaining States of the North, North-West and Central regions of India will belong to this group, besides West Bengal, Manipur and Tripura from the Eastern region. The list of each group is set out below :

Group I (15 years or More*)

1. Andhra Pradesh	(10+2)+3
2. Assam*	(12+1 & 13)+3
3. Bihar	(11+1 & 12)+3
4. Gujarat	(11+1)+3
5. Kerala	(10+2)+3
6. Nagaland*	(12+1)+3
7. Maharashtra (Western Region including Bombay City)	(11+2)+2
8. Meghalaya*	(12+1)+3
9. Mysore	(10+2)+3
10. Orissa	(11+1)+3
11. Tamil Nadu	(11+1)+3

12.	Arunachal Pradesh* (U.T.)	(12+1 & 13)+3
13.	Goa (U.T.)	(11+2)+2
14.	Pondicherry (U.T.)	(11+1)+3

Group II (14 years)

1.	Haryana	(10+1 & 11)+3
2.	Himachal Pradesh	(10+1 & 11)+3
3.	Jammu & Kashmir	(10+1 & 11)+3
4.	Madhya Pradesh	(11)+3
5.	Maharashtra (Marathwada & Vidharba Regions)	(10+1 & 11)+3
6.	Manipur	(10+1 & 11)+3
7.	Punjab	(10+1 & 11)+3
8.	Rajasthan	(10+1)+3
9.	Tripura	(10+1 & 11)+3
10.	West Bengal	(10+1 & 11)+3
11.	Uttar Pradesh	(10+2)+2
12.	A. & N. Islands (U.T.)	11+3
13.	Chandigarh (U.T.)	(10+1 & 11)+3
14.	Delhi (U.T.)	11+3

Though we may lose variety and individual identity, if the jumble of structures are replaced by a common pattern throughout India, we stand to gain by minimising the present confusion and by maximizing our efforts towards co-ordination and maintenance of standards. Variety will still be there within the broadly accepted framework. The uniformity of the pattern does not imply a rigid standardization of syllabus, textbooks, methods of teaching and school or college programmes. Great wisdom and foresight in the formulation of the National Policy are evident in the lines "It will be advantageous to have a broadly uniform educational structure". The phrase is "broadly uniform" and not just "uniform". It is meaningful and sagacious. Uniformity should not be mistaken for rigidity.

Uniformity may be allowed to the extent where it would be possible to take advantage of a common policy and programme but not to the degree where personal identity is lost, initiative is crushed and resiliency for adapting it to regional and local needs becomes ineffective. In this context, during a discussion in 33rd meeting of the C.A.B.E., Dr. Mudaliar said, "To think of education for 500 million people in one common pattern is as dangerous as to think of feeding 500 million people from one centre……. There must be variety and diversity in regard to much of what is being done but there should be one policy in regard to matters pertaining to education, so that all people can and should be educated in the lines on which they seek to educate themselves."

Educational reconstruction has become crucial and extremely urgent for the national development of the country. It cannot wait. It has to be completed with all speed. The country-wide structural reform is the first item on the agenda. The States of Andhra Pradesh, Kerala and Mysore had already adopted the new structure of 10+2+3. Others are following or will follow. The new structure is getting the topmost priority in the overall developmental plans. The experience gained at one place is being profitably used by others. A sense of joint concern and responsibility and decisive motivation for an educational reconstruction enter the national scene. The task no doubt is challenging in view of the comparatively slender resources. But what is more important is the need and demand of hard work and dedicated service. The resources and the will to do are both pivotal for any reconstruction. Action is the crying need and time is what matters. The future of the country will largely depend on how we tackle our educational problems today.

Chapter 2

The Philosophy and Purpose of the Pattern

The profit and loss calculations of the proposal to introduce a broadly uniform educational pattern of 10+2+3 in all parts of the country have been gone through over and over again in various all-India forums. And every time and everywhere the urgency of implementing the New Pattern had been repeatedly emphasized. But if "it will be advantageous", the phrase used in the Resolution on National Policy, the people must know why it will be advantageous. It is the people who need to be fully convinced. It is the people who will provide enthusiasm and encouragement, money and moral support, and above all, the will and the way.

In the beginning, nothing would appear better and more refreshing than to review authentic literature and expert views on the philosophy and purpose of the new pattern. Relevant portions from three significant documents have been selected which will provide useful and interesting reading. The documents are : the report of the Committee on Emotional Integration (1962) appointed under the chairmanship of Dr. Sampurnanand to study the role of education in promoting the process of emotional integration in national life and to advise on the positive educational measures for promoting integration ; the report of the Education Commission (1964-66) appointed under the chairmanship of Prof D.S. Kothari to advise the Government on the national pattern of education and on the general principles and policies for the development of education; and the report of the Committee of Members of Parliament on Education (1967) appointed under the chairmanship of Dr. Triguna Sen, Union Education Minister, to consider the Report of the Education Commission and to prepare the draft of a statement on the National Policy on Education. These documents represent the views of distinguished educationists and eminent men all deeply concerned with educational development and policies. The Report of the National Committee on 10+2+3 Educational Structure (1973) crystallizes all the expert thinking on the subject and provides guidance material for its implementations.

From the Report of the Committee on Emotional Integration (1962)

"We consider that in the overall interest of our students population to whom education, apart from its training for citizenship, is also a means to gainful employment, there should be a common pattern of education in the country which will minimise the present confusion and co-ordinate and maintain standards. The need for a common pattern of education does not, however, imply a uniform sameness in the syllabus for schools all over the country. Variations within a broadly accepted framework would naturally occur, and much would depend on the teacher and on his interpretation of the syllabus. We would only point out that for emotional integration, it is necessary that similar opportunities for education should be made available in all parts of the country. It is also necessary that, as far as possible, the standards of attainments at the various terminal stages in schools and colleges should be more or less the same. People in no part of the country, should feel that they are denied opportunities for education, or that standards of education attainable in their educational pattern are inferior to those in other parts of the country. Differences in educational pattern and standards also cause considerable inconvenience to students migrating from State to State.

Secondary schools in the past have been mainly of the 'academic' type, preparing for college education and 'white collar' jobs. With the change that has come about in the social composition of the secondary school population, education, it seems, needs to be planned to suit the aptitudes and abilities of pupils as well as to meet the economic and social needs of the country. The wide variety of human talent now available in secondary schools should be properly developed for the happiness of the individual and the prosperity of the country, because an individual's emotional life can be properly balanced only when his natural abilities and aptitudes have opportunities for development and use. If education is not planned for the development of the variety of aptitudes and abilities of the pupils and the utilisation of human resources for the economic and social progress of the country, there will be increasing wastage of human talent and material resources, resulting in frustration and bitterness —two of the main obstacles to the emotional integration of the country.

It is necessary that there should be more terminal stages in the pattern of secondary education which should be planned in a comprehensive manner recognising—

(*a*) that education should be provided for different types of aptitudes and abilities ;

(*b*) that pupils should branch off at different 'terminal stages' to enter different walks of life ; and

(*c*) that at the terminal stages, there should be provision for vocational and semi-vocational training for those who leave school.

There are other additional reasons which point to the desirability of making the end of the high school a terminal stage in secondary education :

(*a*) There are many pupils among those who want secondary education who, however, do not need and may not benefit from an additional year of the same kind of scholastic education ;

(*b*) At the end of the 8-year integrated primary course, it is desirable to have two stages—

(*i*) the high school stage of general education without much specialisation, followed by

(*ii*) the higher secondary stage with provision for specialisation.

It may be noted that the multipurpose courses recommended by the Commission are only general education courses with a practical bias which, in our opinion, should be only at the high school stage. The higher secondary stage would include vocational and semi-vocational courses in which the students can specialise on the experience gained at high school.

As a high school stage at the end of 10 years is a necessity and as 12 years of education before the degree course is equally a necessity, we feel that a 2-year higher secondary or a 2-year pre-university stage is essential. Some of its advantages are :

(*a*) Students will be one year older when they enter the degree course and will thus be more mature and able to do more advanced work than is possible now.

(*b*) Specialisation in academic subjects as well as in technical and vocational subjects will be more practical in the two-year period.

(*c*) During this 2-year period students will have adequate time to have a mastery of the language which is the medium of instruction in the degree course.

Among the numerous multipurpose courses that may be provided in higher secondary classes and junior colleges are : teacher training for primary school teachers ; certificate courses for physical education teachers, art teachers, craft teachers ; for automobile mechanics, horticulturists, electric technicians, junior accountants, laboratory technicians, building maintenance supervisors ; courses for catering and dress making. The number and the types of courses may increase depending on needs. Students from higher secondary courses and junior colleges should be competent to enter many of the public services now open only to those with university degrees.

The technical courses provided in higher secondary classes and junior colleges should be planned in co-ordination with those in polytechnics so that students who wish to proceed to higher technical studies may pursue their preparatory technical studies in the higher secondary classes and junior colleges recognised in the polytechnics for entry at suitable stages.

Junior colleges will be specially useful in areas where high schools do not have facilities for providing higher secondary classes. Pupils from the neighbouring high schools who want the two-year preparation can join them and not have to go far away from their homes to join the pre-university class of a degree college. Junior colleges can also serve the local community by providing evening 'continuation' courses of different types and duration for cultural enrichment and professional improvement.

The view may be held that the provision of a two-year unit after the high school will prove too expensive. But, as the 10th class in the high school will be a terminal stage, the number of students entering higher secondary class or junior college is likely to be much less than the number that might enter the 11th class if that were the only terminal stage in secondary education. Similarly, when the junior college becomes a useful terminal stage, the indiscriminate rush to universities may be stemmed and more places in colleges released for those best fitted for higher education. We consider, therefore, that the provision of this two-year terminal stage may prove more economical and practicable than the proposal to convert all high schools to higher secondary schools. The International Team on Teachers and Curricula had also recommended the establishment of junior colleges.

We have devoted a greater part of this section to the pattern of secondary education since it is at this stage that the greatest variations now prevail. Also, the pattern of education should, in our opinion, be related to the employment potential in the country. Practically everyone is agreed that the system of education left to us by the British trained our young men and women only for clerical employment in government offices and that a degree in those days, based on purely academic pursuits was the passport to a post, however pedestrian it was. We have persisted in that sorry approach over these many years and have done nothing to equip our young people with a truly liberal education coupled with technical or vocational training. Nor can our education, so far, really be said to have inculcated in them the dignity of labour. Unless we gear our education to the employment opportunities, the country has to offer, we shall be generating more frustration and consequent indiscipline in the young and any talk of emotional integration will be meaningless. We consider it a basic necessity that the type of education and training programmes we offer our young men and women should take into account the needs of economy and man-power requirements of the country if we are to avoid wastage. We must also ensure that the money spent on education proves a genuine investment."

From the Report of the Education Commission (1964-66)

"General Approach

To begin with, we would like to state our approach to the problems of structure and standards. The standards in any given system of education at a given time depend upon four elements : (1) the structure or the division of the educational pyramid into different levels or stages and their inter-relationships[; (2) the duration or total period covered by the different stages; (3) the extent and quality of essential inputs, such as teachers, curricula, methods of teaching and evaluation, equipment and buildings; and (4) the utilization of available facilities. All these elements are inter-related, but they are not of equal significance. For instance, the structure, which may be regarded as the skeleton of the educational system, is of the least importance. The duration or total period of education plays a more significant role; but it becomes crucial only when the available facilities are utilized to the full and no further improvement can be expected without the addition of time. The quality of different inputs is even more important, and with an improvement in these, it is possible to raise the standards considerably without affecting the structure or increasing the duration. But the utilization of available facilities is probably the most significant of all elements on which standards depend. For any self-accelerating process of development, it is essential in the first place to improve efficiency at the level of the existing inputs and to add more inputs only if they are crucial to the process. An increase of inputs assumes significance only at a later stage.

In this context, it may be interesting to note that until recently, the general tendency everywhere has been to overrate the importance of the duration of the school course There is a reason for this. When the quantum of knowledge covered in the school was not very large, the pace of school work was leisurely and when one learnt more outside school than within school, it was natural to suppose that the longer one stayed at school the better one gained in knowledge and maturity. All this has changed now. The knowledge explosion has imposed an altogether new pressure on schools and colleges. Formal education now plays a much greater part than it did previously at any time in history and the efficiency of the educational system has become a very important factor. Machlup, in his monumental study on the *Production and Distribution of Knowledge in the United States* (The Princeton University Press, 1962) has observed that the learning process in school, in the United States could and ought to be accelerated. He has vigorously argued that the educational objectives now attained in 12 years of schooling could be achieved in 9 or 10 years. This would mean a saving every year of tens of billions of dollars. Besides, it will save the precious time of students and teachers. This 'time-saving' is becoming increasingly important as there is so much more to learn in a fast knowledge-expanding world. The compression of the school course would also help in the development of satisfactory working habits and powers of concentration and application. Machlup says that reducing the school duration from the present 12 to 9 or 10 years does not mean that the school course is to be cut down. 'Nothing is to be cut out; on the contrary, more is to be put into the curriculum. But the students have to get a faster start and a continuous stretch of their minds...'

It has also to be noted that the broad pattern of education in our country, which was imported from abroad, is still in the nature of an exotic plant. There is hesitation and reluctance and sometimes even fear, about making any radical changes unless these are on the model of what is happening abroad. We have to outgrow this attitude and come to regard the educational pattern as our own; and we should introduce changes in it on the basis of our *own indigenous thinking*, after taking into account what is happening outside but without being dominated by it....

Structure and Duration

Popular Interest in Structure and Duration. Questions on structure and duration were those on which the Commission received perhaps the largest volume of advice and suggestions. They are questions to which previous commissions and committees dealing with the problems of education on a national scale have devoted considerable attention. There are two principal reasons for this widespread and continuous concern about the structure of the educational system. One is the general desire that the present somewhat confusing variety of patterns of school and higher education should be ended. The other is the popular belief that the total period of the educational course and the duration of its different stages have a direct bearing on the quality of the education imparted. We have been repeatedly told that, if there is a uniformity in the educational pattern and an extension in the total period of schooling, it will be possible to bring about a general rise in the standards of attainment. These contentions are of considerable importance and merit close examination.

The Higher Secondary Pattern. It may be instructive in this connection to look briefly at the results of one serious effort made since independence to carry out a plan for the reorganization of the educational structure. As a result of the Report of the Secondary Education Commission, a decision was taken to develop a national pattern of school classes covering eleven years—five years of lower primary, three years of upper primary and three years of higher secondary classes. This was to be followed by a three-year course for the first degree in arts and science and a further two-year course for the second degree. The upgrading of high schools in accordance with what is popularly known as the higher secondary pattern and the introduction of the three-year degree course in universities have been significant changes in the educational structure over the last ten years. But while the three-year degree course has been introduced everywhere except in the State of Uttar Pradesh and the University of Bombay, the same success has not attended the efforts to convert high schools into higher secondary schools. In spite of the offer of Central assistance, only five States have implemented the proposal so far, while the others have either not accepted it at all, or having decided to accept it in the first instance, have gone back on their earlier decision. Only about 25 per cent of the total number of secondary schools in the country were converted to the higher secondary pattern by the end of the third plan. Many of these conversions are purely notional in the sense that the necessary facilities in terms of teachers, libraries and laboratories have not yet been provided. What is particularly relevant to our discussion here is that no uniform pattern of school and college classes has emerged as a result of the reorganization and there is almost as great a variety of patterns today as there was when the scheme of reorganization was first launched....

Some witnesses who gave evidence before the Commission were of the view that the higher secondary pattern had not been given a fair trial. They believed that frequent changes of policy with regard to the educational structure were undesirable and that, instead of experimenting further with new patterns, it would be better to implement the higher secondary scheme itself more effectively all over the country. But a large majority were extremely critical of the scheme for the following reasons, among others :

(1) Specialization which should not be introduced till after Class X or the age of 16 begins too early in the pattern (after Class IX or at the age of 13 or 14).

(2) The three-year integrated course in the higher secondary classes leads to a good deal of unnecessary expansion and increase in expenditure, as a child, who might otherwise have stepped off into the world of work or a vocational course at the end of Class V, is now forced to go up to Class XI.

(3) The expectations that standards would improve as a result of the reorganization have not been generally realized. Qualified teachers are unwilling to work in higher secondary classes because of lower salaries, and even where salaries are equal, because of lower status. Moreover, for reasons other than educational, a number of high schools have been upgraded to the higher secondary pattern without any appreciable improvement in their accommodation and equipment or the qualifications of their staff.

(4) The experiment which is costly in itself has led in certain areas to an increase in expenditure in other directions. For instance, it was found almost impossible in practice to downgrade an intermediate college to a higher secondary school so that every intermediate college had to be raised to the costlier degree level. Similarly, the decision to convert, over a period of time, all high schools to the higher secondary pattern, created undesirable pressures. Even small rural high schools, which under the previous system would have been more efficient and economical as ten-class institutions, were upgraded to the higher secondary status and became both costly and less efficient.

Uniformity of Pattern. A number of different proposals for the reorganization of the educational structure were placed before the Commission. Most of these recommended a uniform pattern of school and college classes in all parts of the country. It may be pointed out in this connection that the Committee on Emotional Integration stated in their Report (1962) as follows :

> We consider that in the overall interest of our student population there should be a common pattern of education in the country which will minimise confusion and coordinate and maintain standards.

This view has been gaining considerable ground in recent years. The concept of a national system of education has been increasingly linked with the adoption of a uniform educational pattern and a belief has grown that such uniformity is essential for raising standards.

We have recommended elsewhere certain steps that should be taken for the coordination of educational standards at the school stage in the different States. But we do not believe that it is necessary or desirable to impose a uniform pattern of school and college classes in all parts of the country. There are several characteristic features of the Indian situation, such as the vastness of the country and the immense diversity of local conditions and traditions that demand a certain element of flexibility in the educational structure. We are aware of other national systems of education which have a variety of educational patterns. Even in a country of small size, such as the United Kingdom, for example, the pattern in England (generally thirteen years of school education followed by a three-year course for the first degree) is different from that in Scotland (twelve years of school education followed by a four-year course for the first degree). In our country, where the different States are at unequal levels of development, a uniform pattern might be *above* the resources and real needs of the backward areas and *below* the capacity and requirements of the advanced areas and might operate to the disadvantage of both.

Demand for Lengthening the Duration of Schooling. A second popular demand that has been stressed in proposals for structural reorganization received by the Commission, is related to lengthening the total duration of school and higher education. This demand, it may be pointed out is not related to the professional degree, such as engineering or medicine, the total duration of the study for which is not less than 16 years and is about the same as in most of the educationally advanced countries. This demand only refers to the first degrees in arts and science, which are now taken after four years after the matriculation or an equivalent examination (or three years after the higher secondary course of eleven years), and the contention put forward is that this duration should be lengthened to not less than five years after the matriculation (or four years after the higher secondary). This view, it must be pointed out, accords with the thinking of several expert bodies on the subject. As far back as in 1919, the Calcutta University Commission proposed that the dividing line between the university and the secondary school should be drawn at the intermediate examination, which came after twelve years of education. Similarly, the University Education Commission (1948) recommended that students should be admitted to the University after the completion of twelve years of study, and that the first degree course should be of three years duration. According to the Committee on Emotional Integration (1962), the eleven-year period of school education was inadequate preparation for entrance to the university and the lengthening of the course by one year was deemed necessary. At the conference of the State Education Ministers held in 1964, it was resolved that 'a twelve-year course of schooling before admission to the degree course was the goal towards which the country must work'. We are in full agreement with these recommendations."

From the Report of the Committee of Members of Parliament on Education (1967)

The Ten-Year School

It will be advantageous to have a broadly uniform educational structure in all parts of the country. The first step is to create the Ten-Year School providing a common pattern of general education for all children. The standard to be reached at the end of this stage should be broadly similar to that which is now reached at the secondary school-leaving certificate examination. The division of this stage into sub-stages—lower primary, higher primary and lower secondary—should not be rigid and should allow for variations necessitated by local conditions.

There should be a common course of general education for all students at this stage. This will include language(s), science and mathematics, social studies (which at later stages will be studied as separate disciplines of geography, history and civics), work-experience, social or national service, physical and health education and education in moral and social values. There need also be no essential differentiation between the curricula for boys and girls.

The national policy should be ultimately to make this period of ten years (which includes the primary and the lower secondary stages) free and compulsory for all children. This will be achieved in stages, beginning with making lower secondary education tuition-free and providing facilities for it in all areas. A large proportion of students who complete the primary course will proceed further to lower secondary education. But for those who leave school at the end of the primary stage and desire to learn some vocational skills, suitable courses of varying durations—from one to three years—should be provided, both on full-time and part-time basis.

Higher Secondary Education

The next stage in the educational structure is the higher secondary (or the pre-university). The duration of the academic course at this stage should be uniformly raised to two years in all parts of the country under a phased plan. The curriculum should include two languages, three subjects selected from a prescribed list, work-experience and social service, physical and health education, and education in moral and social values. It is desirable to treat this stage as a part of school education and to entrust its academic control to a single authority in each State on which the universities should have adequate representation. As a transitional measure, the attachment of these classes to colleges may be continued wherever necessary.

The duration of the vocational courses at this stage should vary according to their objectives (1-3 years). They should cover a large number of fields, such as agriculture, industry, trade and commerce, medicine and public health, home management, arts and crafts, education, secretarial training, etc. Their organization should be elastic, allowing for full-time, part-time and correspondence courses and a large variety of institutional arrangements. The enrolment in vocational courses should be substantially increased to cover ultimately about half the total enrolment at the higher secondary stage.

Education at this stage should be largely terminal so that a majority of students who complete class XII enter different walks of life. From this point of view, the recruitment to the lower administrative services and posts should ultimately be made from amongst those who have completed the higher secondary stage and recruitment of graduates to these posts should be discouraged by prescribing a lower age for appointment. It is desirable to select the personnel even for the superior posts under Government or in the public sector at the end of the higher secondary stage itself and then train them further at State expense."

It will be Advantageous

The Committee on Emotional Integration quite alarmed with the disruptive tendencies that were making themselves felt in the country was very much concerned with the role of education in maintaining the unity of the country: The Committee maintained that a broadly uniform structure will assist in strengthening national integration. Uniformity and unity have both literal and psychological proximity. Both words have the prefix 'uni' meaning 'one'. Both the words connote 'oneness'. India very much needs this 'oneness', this sense of belonging, the awareness of parts that constitute a whole. The uniformity of educational structure in all parts of the country brings up a visual image of belonging to the same country, doing the same thing, intellectually maturing the same way, maintaining the same standards, achieving the common objectives and nearing the common goals.

Let any one glance at the list of various educational structures existing in the country as shown on pages 4 and 5 and say whether one is pleased with the freshness of being exposed to a rich variety or one is confused among the bewildering jumble of structural complexities. Perhaps it will not be difficult to agree with the latter experience. If this be so, it will be difficult to assess the results of new projects and innovative measures carried out on a national scale. Different structures will produce different reactions and it will be difficult to measure them with a common yardstick.

Different structures would lead different standards at terminal points, for instance, as at the end of class X in a High School and at the end of class XI in a Higher Secondary School. This in turn would demand different curricula, the most potent instrument for emotional and intellectual development. The widespread dissatisfaction with the existing curriculum in every part of the country increases pressures for its reform. And yet, curricular reforms even when carried out, appear to be of an *ad hoc* character since they are not generally supported by careful research, not based on adequate expertise and not followed by necessary measures like the preparation of learning material and orientation of teachers. States and territories cannot be simply made responsible because the magnitude of experience and expertise, effort and expense required for the work would demand help either at a national level or at a corporate level of several neighbouring states. Sequential to this arrangement, a uniform standard backed by broadly uniform structures becomes imperative. It will provide opportunities for modernizing school curricula on scientific lines so as to serve the social, cultural and economic needs of the students and the society in a better way.

It may be interesting to note that Education Commission in its introductory remarks on structures did not very much support a uniform pattern, the reason being that "there are several characteristic features of the Indian situation, such as the vastness of the country and the immense diversity of local conditions and traditions that demand a certain element of flexibility in the educational structure." The term 'uniformity' may mean any degree of sameness, and at one extreme end it may not be very different from rigid prescription of each minute detail of a structure. The Commission may be referring to such rigid uniformity.

It is not only the uniformity but also the duration of the pattern that may contribute in bringing sweeping curricular changes in school education. The tremendous explosion of knowledge and the reformulation of the basic concepts in the physical, biological and social sciences have widened the gulf between the school and the university. Expert opinion favours the lengthening of the period of general education up to Class X and the postponement of specialized study to a higher secondary stage so as to bridge the gulf between the school and the university preparation in order to avoid a long risky leap from one to the other.

Uniformity of structure will facilitate the education of the mobile population which is continuously increasing in the country. Differences in structures and standards cause considerable inconvenience to students migrating from state to state. The opening of Central Schools by the Central School Organization may be one small answer to a part of the problem, but it does not solve the whole problem. Another effort is the inter-state adjustments, for instance, the continuance of one-year higher secondary course in a region of three-year higher-secondary course in order to accommodate students matriculating from other states.

The New Pattern will provide reasonable opportunities at the appropriate time to the students to take decisions about the particular stream to be studied by them after a terminal point. Thus it will do away with the criticism that is usually levelled against the present higher secondary system that the students are required to take a decision at too early an age. Under the existing patterns, in most of the states diversification starts after class VIII. The age of the student at the time of filling up the admission form for class IX is round 13 or 14—an innocent and immature age to take the first basic decision about the future career in a keenly competitive world. Modern research has pointed out that streaming of pupils into specialized group from class IX is undesirable. The world trends in secondary education are in the direction of lengthening the period of general education and postponing diversification and specialization to the higher stage of secondary education. The Education Commission recommended "that in the non-vocational schools a common curriculum of general education should be provided in the first ten years of school education and that diversification of studies and specialization should begin only at the higher secondary stage".

A broadly uniform pattern in all parts of the country will facilitate the implementation of educational programmes, production of books and teaching material, reforms in evaluation and training of teachers. Many states will not be in a position to bear the enormous expenditure needed for experiments and reforms. Central help is needed. No doubt education is a state subject, but in these areas, the centre can play a stimulating, innovative, consultative and promotional role in educational development and can make larger grants available for the central as well as centrally-sponsored sectors. The centre's effort to improve the teaching of science, to bring about examination reforms or to establish new methods of teaching of languages has already been applauded. With a uniform structure all over the country the scope for useful activity by the centre becomes almost unlimited.

A uniform structure provides curricula of almost similar standards. Books produced in the regional language of one state may serve the needs of the linguistic minority of a different state. It helps to solve educational problems of minorities in a state where publication of textbooks of all subjects for all the grades in respect of various linguistic minorities become very difficult and costly. The nature and size of the problem for a metropolitan area can easily be perceived. Uniformity of structures and standards eases the situation.

With a 2-year preparation, instead of one-year after class X, students will become more mature and will be able to do more advanced work than is possible now. It was the Calcutta University Commission, popularly known as Sadler Commission (1917-19), which first recommended the government to create a new type of institution called the Intermediate Colleges. The University Education Commission (1948-49) thought it unfortunate that the importance of Intermediate Colleges in the educational system of India had not been realized. Naturally, the purpose is to strengthen university education.

Many would argue that lengthening the period of school education by one year would prove too costly. It may appear so, but in actual implementation the country will not be a loser. The point has been very clearly brought out by the Committee on Emotional Integration (1962) : "But as the 10th class in the high school will be terminal stage, the number of students entering higher secondary class or junior college is likely to be much less than the number that might enter the 11th class, if that were the only terminal stage in secondary education." However, it may look like a paradox that lengthier the period of education the less costly it becomes. This is generally not true. But, here, the pivotal fact is that instead of one terminal point (after class XI), there will now occur two terminal points (after classes X and XII). Those who do not want to reach the university will generally stop at the first terminal, *i.e.*, class X. In the existing system, under corresponding circumstances one stops at class XI which is bound to be costlier in terms of one year. This is all right for the sake of pure logic. Whether the students stop at or move beyond class X, even without the intention of entering a Degree College or University will depend upon the ease and motivation by which they step off the school stream and get absorbed in working life or choose to opt vocational courses. All social, economic and educational efforts are being geared to make things easier for these students to make their choice more logical and practicable.

As a corollary to what has been said above, the indiscriminate rush to universities may be stemmed and more places in colleges will be released for those best fitted for higher education. This would tend to increase the standard of higher education. There has been an open-door policy regarding access to colleges. A stage has now reached when the policy of selective admission will have to be extended to all places of higher education. Indian economy can neither have the funds to expand on this scale nor capacity to find suitable employment for all who enter the portals of colleges and universities.

The vocationalization of education at the higher secondary stage will be another limiting factor to higher education. It will relieve the pressure of numbers in the universities. It has been estimated by the Education Commission that at the end of class X, about 40% of students will enter the employment market, about 30% will take up vocational courses, and the remaining 30% will continue stream of general education. Thus half of those who continue beyond class X will be diverted from the main general stream to vocational and technical stream. It may be remembered that about 55 years ago, the Sadler Commission recommended the provision of instructions in Arts, Science, Medicine, Engineering, Teaching, etc., in the Intermediate College. The distinction between two groups of subjects was made clear. During the 30 years between the Sadler Commission and the independence of India a shift from the education for the classes to the education for the masses became evident in several recommendations made of providing vocational education alongwith general education. Latest in the list is the recommendation of the Education Commission. This will now have to be made a reality. Vocationalization is an essential and urgent reform intertwined with the New Pattern and the programme for this purpose will have to be based upon detailed manpower estimates formulated on the basis of district surveys. It will ensure that the school leaver is ready to enter the world of work either as an employee or as a self-employed person.

The New Pattern will greatly help in providing employment after completing secondary education. Many can now enter public services after class XII. The position is comparatively less advantageous after class XI when one is below the prescribed minimum age (generally 18) or does not warrant enough maturity for employment. As such the next act, that is entering a college for getting a degree, becomes necessary.

So far the discussion has been about uniformity of the structure, lengthening of the duration of secondary education, establishment of a 2-year higher secondary or intermediate stage, upgrading of the first degree course, specialization after class X and vocationalization of education at the higher secondary stage. It may now be worthwhile to compare the total duration of the New Pattern with that of the existing patterns. In India, as we have observed earlier, the duration is either 14 years or 15 years. Only in four cases in the eastern region the duration is 16 years. Thus, if one can get the first degree in 14 years there does not seem apparent justification for lengthening it to 15 or 16 years. The same reasoning may be applicable on the other side that if it is possible to get a degree in 14 years why not downgrade the pattern. The point that combats these arguments is that a broad uniformity has to be maintained and the length of every educational pattern has to be increased to 15 years. Those who have already a 15-year pattern will have to make other reorganizational changes except that of duration.

Now, why 15 years ! Besides other things, the standard of education will have to be raised if India has to take her rightful place among nations. No advanced country in the world honours a young man with the award of a first degree in less than 15 years of preparation and hard work. In the U.S.A. the high school is up to 12th grade which is followed by a 4-year course in a college or university leading to a bachelor's degree. In the U.S.S.R. the complete secondary education ends with grade 10 and then begins 5 years of higher education in a university. In England after 13 years of schooling, three years are needed in a college or university to obtain the first degree. Thus it will take total 16 years in U.S A., 15 years in U.S.S.R. and 16 years in England to be awarded the first degree. This is why a graduate from India will not be considered equivalent to a graduate in U.K. and therefore a graduate need to graduate again in U.K. before pursuing higher education for which B.A. is the minimum qualification.

It is, therefore, time to realize, in the words of the Education Commission : "We must either build a sound, balanced, effective and imaginative educational system to meet our developing needs and respond to challenging aspirations or be content to be swept aside by the strong currents of history."

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Chapter 3

A Historical Perspective

The concern for structural reform is a late development. In the past there was hardly any academic discussion over the structure of education. It was with the appointment of Calcutta University Commission in 1917, popularly known as Sadler Commission that for the first time the idea of an educational structure formed an important part of the discussion. It recommended that the dividing line between the university and secondary courses is more properly to be drawn at the Intermediate Examination rather than at the Matriculation. The Commission desired the Government to establish Intermediate Colleges which would provide instructions in Arts, Science, Medicine, Engineering, etc. We may hear a faint re-echo of the 55-year old idea in the proposed New Pattern. The 30 years between the Sadler Commission and the independence recorded several recommendations mostly intended for the need and welfare of the masses. The Hartog Committee in 1929 recommended the diversion of more boys to industrial and commercial careers at the end of the middle stage. The Sapru Committee in 1934 recommended diversified courses at the secondary stage—one for entering the university and the other for meeting the vocational requirements. In 1944 the Sargent Report recommended that the primary classes of five years should be followed by a High School (Secondary education) course of six years and that the High School should be of two main types—academic and technical.

The University Education Commission (1948-49), the first Education Commission in independent India, thought it unfortunate that the importance of Intermediate Colleges in the educational system of India had not been realized and recommended that the admission to the university should depend upon 12 years of study in School and Intermediate College instead of 11 years of schooling. Naturally, this was to raise the standard of University education. The Secondary Education Commission (1952-53) also appears to be in agreement that "a somewhat longer period of training before entrance to the university is likely to be useful both for those who want to pursue higher education and for those who finish their education at this stage." But the agreement did not go beyond the principle as the Secondary Education Commission concluded "it would be best to increase the secondary stage of education by one year", because further increase would mean more financial implication for the educational authorities as well as students. In 1955, the

Central Advisory Board of Education felt the desirability of establishing parity of standard of schools in different states and advised on the lines already recommended by the Secondary Education Commission.

It is only in the 1960's that a good deal of discussion and deliberation took place around the structure The Committee of Emotional Integration is a landmark. It attempted to define the period of secondary education on two tier system, one (high school stage) reaching up to class X and a higher one (higher secondary stage) reaching up to class XI. This was definitely a departure from the recommendation of the Secondary Education Commission. Such differences of views within a decade whether to have 11 years or 12 years of schooling prior to university education may be a little taxing. In this context it is refreshing to have the advise of the CABE (1962) that "while it would be desirable to have ultimately a total period of 15 years of education, including 12 years of schooling, before the first degree is taken, it is necessary that the reorganization on the lines envisaged in the *Report of the Secondary Education Commission* should be speeded up." But the 12+3 pattern started gaining public support. The Conference of Vice-Chancellors (1962), the All India Council for Secondary Education (1963), the Conference of State Education Ministers, Vice-Chancellors, etc. (1963), the Conference of State Education Ministers (1964)—all recommended a 12-year course of schooling before admission to a 3-year degree course as the goal towards which the country must work.

Then came the Education Commission (1964-66). It recommended a new educational structure which should consist of (*a*) a ten-year period of general education ; (*b*) a higher secondary stage of 2 years of general education or one to three years of vocational education ; (*c*) a course of 3 years or more for the first degree. Regarding general education the pattern is 10+2+3 or more, and for vocational education 10+1/2/3.

Regarding diversification it recommended that the system of streaming in schools of general education should be given up and no attempt at specialization should be made till after class X. The idea that every secondary school should be raised to the higher secondary status should be abandoned. The Higher Secondary Stage should be located exclusively in the schools. Provision should be made for the introduction of different types of vocational courses at the higher secondary stage, varying in duration from one to three years, which would prepare young persons for employment.

When the report came out there was all-round appreciation and admiration mixed with a little critical scratching here and there. Some samples have been placed at the appropriate place. Later recommendations—The Tenth Conference of State Education Ministers (1967), the Committee of Members of Parliament on Education (1967) and the Thirty Third Meeting of the Central Advisory Board of Education (1967)—supported the pattern

10+2+3. The final act of deliberation and thinking on the educational structure for the whole of India was crystallized in the Government of India's Resolution on National Policy on Education (1968).

This is the perspective for the symbol '10+2+3'. In the following pages extracts and summaries of recommendations from important Commissions, Committees, Conferences and Central Advisory Board of Education are given. For want of space, only one important document from the pre-independent period has been included—the Calcutta University Commission, popularly known as the Sadler Commission. The remaining documents reflect the educational thought of independent India.

1. The Sadler Commission (1917-19)

"We regard the proposals to institute intermediate colleges as the very pivot of our whole scheme or reform."

"The intermediate college must be regarded as fulfilling a double purpose. In the first place, it must provide a training, such as will qualify its students for admission to the Universities, in all its faculties, or into other institutions for higher or technological training. In the second place, it must provide a training suitable for students who, after completing their course, will proceed direct into various practical occupations. As the system develops we should expect to find an increasing number of students entering upon the intermediate course solely with a view to preparing themselves for various practical careers."

"One of the most fundamental distinctions between the intermediate college and the present intermediate classes must be that the intermediate college will use the methods of a good school, in classes of reasonable size wherein question and answer will be possible rather than methods of the mass-lecture."

"Since a primary aim of the course in the intermediate college is to give the student a liberal education, there must be a common element in all forms which this course may assume. And the most essential part of this common element must obviously be a training in the media of self-expression, and of exact and clear thinking."

"We regard the creation of well-organised intermediate colleges—in some cases, with the upper classes of high schools, and in others serving as the crown of all the high schools of their districts—as the most immediately valuable reform which can be undertaken in the educational sphere."

2. The University Education Commission (1948-49)

"The standard of admission to the university courses should correspond to that of the present intermediate examination, *i.e.*, after the completion of 12 years of study at a school and an intermediate college."

"In each province a large number of well-equipped and well-staffed intermediate colleges (with classes IX to XII or VI to XII) be established"

3. The Secondary Education Commission (1952-53)

"We have, therefore, come to the conclusion—which also tallies with the view of the University Education Commission in this connection – that it is desirable to abolish the present Intermediate stage, to increase the period of secondary education by one year and to plan a three-year degree course at the University stage."

This, however, is not exactly the view of the University Education Commission which has recommended the establishment of a large number of intermediate colleges in each province. The Secondary Education Commission has found it desirable to abolish them. There has been some drafting error. The detailed organizational pattern recommended by the Secondary Education Commission is clear from the following :—

"Keeping this broad outline in view, we recommend the following new organizational structure for secondary education after the 4 or 5 years of Primary or Junior Basic Education :

(*i*) A Middle or Junior Secondary or Senior Basic Stage which should cover a period of 3 years;

(*ii*) A Higher Secondary Stage which should cover a period of four years."

4. The Twenty-Second Meeting of the Central Advisory Board of Education (1955)

The Board after very careful consideration of the stage of termination of secondary education and the qualifications necessary for entry into the universities arrived at the following unanimous conclusions :

(*a*) The degree course should be of three years and 17+ should be the minimum age for entry into universities.

(*b*) The end of secondary education at 17+ should mark a terminal stage in education and prepare students for life.

(*c*) The last class in the secondary stage should be called the 11th class and may be reached after schooling of not less than ten years, the actual duration of the school system in the various States to be determined by the State Governments concerned.

5. The Panel on Education of the Planning Commission (1960)

"The duration of the school course should be 12 years and not 11 years so that the total span of education from primary to higher education level should be 15 years (12+3) instead of 14 (11+3) as it was very desirable that mature students of the age of 18 should go to the university. An argument in support of this was that this had been the recommendation of the Sadler Commission and the University Education Commission and that 11-year course of school education had been accepted as an ill-considered compromise."

The Commission further adds :

"The abolition of a Separate Intermediate Stage and of the Intermediate Examination and the institution of a 3-year degree course would undoubtedly lead to a considerable saving of time and a better planning of educational programmes and activities during the three-year degree period. The Intermediate examination is also a handicap because it breaks up the continuity of the college course and makes a proper planning for the Degree Course difficult. Thus the addition of one year to the Secondary School Stage will add to the efficiency of the training given there, and also improve educational efficiency at the University stage by providing a continuous and compact period of three years education."

6. The Third Vice-Chancellors' Conference (1961)

It recommended that :

(*a*) Serious steps should be taken to improve the quality of education at the school level.

(*b*) It was suggested that the period of school education should be not less than 12 years and the degree courses should be for a period of 3 years.

7. The Committee on Emotional Integration
(Dr. Sampurnanand Committee, 1962)

"Before dealing in detail with certain aspects of this stage of education, we consider it desirable to define the period of education designated as "Secondary". At present it is not even clear where the stage of secondary education begins, whether it is after the first five years of primary school or after the VII or VIII standard. It is necessary that the broad general pattern of education should be more or less the same throughout the country. We are of the opinion that secondary education should be defined as all types of education for pupils beyond the 8-year primary stage up to the age of 18 or the time of joining institution of higher learning. Secondary education, according to this definition, will include Education :

(*a*) at the high school stage (standard IX-X) and

(*b*) at the higher secondary stage (standard XI-XII).

Education provided in trade and industrial schools, and apprenticeship courses for the stages indicated in (*a*) and (*b*) including junior technical schools and polytechnics will also be a part of the secondary education."

8. The Twenty-Ninth Meeting of the Central Advisory Board of Education (1962)

Under item 4 of the agenda, the Board considered the reorganisation of higher secondary and pre-university education.

The Board was of the view that while it would be desirable to have ultimately a total period of 15 years of education, including 12 years of schooling, before the first degree is taken, and the States that can command the resources for lengthening the period of education should be encouraged to do so, it is necessary that the reorganisation on the lines envisaged in the report of the Secondary Education Commission should be speeded up. The Board further stressed that the total period of education should not in any case be less than 14 years, with 11 years of schooling or pre-university education of terminal character.

9. The Fourth Vice-Chancellors' Conference (1962)

"In regard to the total span of education, opinion was unanimous in favour of a total span of 15 years for the first degree and 16 or even 17 years for a Technological Degree The 15 years would be made up of 10 in high school, 2 in higher secondary school or junior college and 3 for the degree, whereas, opinion was divided in regard to whether the intermediate 2-year should be part of school or college."

"The Three-Year Degree Course was an improvement on the previous system of confining under-graduate education to a two-year degree course. It was, however, felt that the period of school and college study required for the first degree should be 15 years and not 14 years as at present. This period could be combined in different ways, for example 10 years of school education plus a two-year intermediate course plus a three-year degree course or 11-year school course plus one-year pre-university course plus a three-year degree course or a 12-year school course plus a three year degree course. It was, however, felt that a 10-year school course plus two-year intermediate course plus a three-year degree course had certain distinct advantages, as the two year intermediate course could be devoted to a proper preparation for the university education."

10. Resolution passed at the Meeting of All-India Council for Secondary Education (1963)

The Council after a detailed discussion on the pattern of secondary education on the basis of experiences in various States and Union Territories and the current thinking on the subject recommended unanimously as under :—

(*i*) The national pattern of secondary education should have an underlying uniformity throughout the country.

(*ii*) The desirable national pattern is as under :—

(*a*) a total schooling of 12 years should be given to students admitted at the age of 6 in class I ;

(*b*) the last 4 years should constitute the secondary stage of education.

(*c*) an examination called Higher Secondary Part I should be provided at the end of the first two years of the secondary stage in order to enable students to take up specialised and diversified courses at the secondary stage ;

(*d*) the examination at the end of the secondary stage should be called the Higher Secondary Part II examination ; and

(*e*) the standard to be attained at the end of the secondary stage should approximate to the old intermediate standard and make the student eligible for admission to the 3-year degree course without the necessity of having to go through any other preparatory course like the P.U.C.

(*iii*) The transition to the desirable pattern may take place in one step or in two stages (*i*) by the addition of one at the end of the 10-year course ; and (*ii*) by the addition of another year to the 11-year course. The schools which have been upgraded to the 11-year higher secondary pattern should be deemed to have covered the first stage. The students who complete these courses successfully should continue to be eligible to the 3-year degree course. Further, there should be parity in the syllabus adopted for (*a*) the 9th and 10th classes of the traditional secondary schools and the upgraded schools and (*b*) the PUC and the 11th class of the upgraded 11-year schools.

(*iv*) All States and Union Territories should take effective steps to move towards achieving the desirable pattern within a reasonable time. In particular, where the schooling period is 10 years it should be immediately increased to at least 11 years.

11. Resolution passed at the Conference of the State Education Ministers, Vice-Chancellors and Eminent Educationists (1963)

Having surveyed the state of secondary education in the country, recognising the need for improving its quality by prescribing a higher standard, by using better textbooks and providing for more qualified and better trained teachers, recognising further that there must be equivalence of standard while permitting room for flexibility and experiment in the pattern of education the conference expresses its agreement on the following points :—

(*a*) that a 12-year course of secondary education is the goal towards which the country must work, even though considerations of finance and manpower may not make it possible to implement such a scheme in all States in the immediate future ;

(*b*) that the standard to be achieved at the end of secondary education in the country should for the present be raised so as to be equivalent at least to the intermediate examination of the former 4-year colleges ;

(*c*) that except for the academic courses in the humanities and sciences, the other courses should be job-oriented with a view to making the products of a secondary education fit for employment in agriculture, industry, trade, commerce or other vocations and also providing them with opportunities of higher education, should they later so desire ;

(*d*) that the age of entry into the universities and comparable institutions should generally be 17a$^+$ nd in no case less than 16$^+$;

(*e*) special assistance from the Centre should be given to all States who have to increase the educational period by one year at the secondary level ;

(*f*) that the duration of the first degree course in arts and science should be 3 years throughout the country and special assistance from the Centre should be given wherever this involves the addition of one year ;

(*g*) that the Central Ministry of Education should take steps for the review of curriculum and the preparation and production of better textbooks on a national basis by utilising the services of available experts ; and

(*h*) that a scheme of loans similar to the one introduced for primary education should be formulated and implemented for secondary education.

12. The Seventh Conference of The State Education Ministers (1964)

1. Schools in all States should conform to a uniform school-leaving standard.

2. The standard to be so achieved at the end of the secondary stage should be at least the intermediate level of the former 4-year colleges, with provision for appropriate diversified courses.

3. A 12-year course of schooling before admission to the degree course is the goal towards which the country must work, even though considerations of finance and manpower may not make it possible to implement such a scheme for all States in the immediate future.

4. The entire education at the secondary stage should be done in the schools ; classes such as the P.U.C. started in universities as a temporary measure, should be transferred to the schools as soon as possible in accordance with a phased programme.

5. The new schools should be started in accordance with the accepted uniform pattern.

6. An appropriate machinery for determining the equivalence of standards at school stage in order to facilitate the mobility of students from one State to another and for promoting uniformity in the school system should be established by the Union Ministry of Education.

7. Every State should review the existing position and draw proposals for completing the proposed upgrading on the accepted lines by the end of the Fourth Plan as far as possible.

8. In order to reach the uniform school-leaving standard indicated above, special assistance from the Centre should be given to all States both for the programme of upgrading schools and for the transfer of the pre-university classes to the school stage.

13. Education Commission (1964-66)

1. A pre-school stage of one to three years ;

2. A primary stage of seven or eight years divided into two sub-stages—a lower primary stage of four or five years and a higher primary stage of three years.

3. A lower secondary or high school stage of three or two years in general education or of one to three years in vocational education.

4. A higher secondary stage of two years of general education or one to three years of vocational education.

5. A higher education stage having a course of three years or more for the first degree and followed by courses for the second or research degrees of varying durations.

General Observations

Some critical observations made by the press, the public and the educationists at the time of the publication of the Report will provide interesting insight regarding the immediate reaction about the new ideas set out therein.

(1) The proposed system of one to three years of pre-school preparation, a 7-8 year primary stage, a lower secondary stage of 2-3 years, higher secondary of two years, and higher education beginning with a three-year course, will no doubt be considered more scientific than the present system, but unless the proposals are uniformly applied, the existing confusion and imbalance as between stage cannot be removed.

(*The Patriot, July 2, 1966*)

(2) "It has been categorical in attempting to strengthen and enlarge school education by spreading it over 12 years and in retaining English. So far we were used to think of selective admission to University education only. The Commission has gone one step further and has recommended such admission even to H.S. education. This has been done to bridge the gap between demand and available resources."

(*Hindustan Standard, Calcutta, July 12, 1966*)

(3) Dr. D.S. Reddi, the Vice-Chancellor of the Osmania University observed, "The Commission has shown great wisdom in keeping the first degree stage at the present 3-years. While I consider that the two-year higher secondary stage is the most important and constructive recommendation, I am disappointed that this most crucial stage should have been assigned to the Secondary Schools

rather than to an independent institution like a Junior College. The abolition of the one-year Pre-University Course is the most urgently needed reform but its replacement by the 2-year Higher Secondary Course will not yield the expected benefit if this is done in Secondary Course which has already 10 classes. Even from the psychological point it is wrong to have a mixed age group from 6 to 16 in one institution. We would all have welcomed a clear and forthright recommendation that this should be entrusted to independent junior college or to existing under-graduate colleges rather than to Secondary Schools. The criticism that has been made by the Chief Minister of Madras in this respect would be endorsed by most educationists who have found the existing pattern unsatisfactory."
(*Deccan Chronicle, July 17, 1966*)

(4) "Dr. Anil Chandra Banerjee, veteran educationist and a former President of the Board of Secondary Education, wondered how by merely adding one more year to the present education structure, the quality of education could be improved. This would mean fresh financial burden on the shoulders of the overburdened guardians who would have to foot the bills for their wards in schools."
(*Amrtia Bazar Patrika, July 3, 1966*)

(5) Dr. P. Parija (a veteran educationist of Orissa) felt, "The schooling period was recommended as 11 or 12 years with a primary stage of 4 or 6 years. Who will decide whether the period should be 11 or 12 years ? Such indecision is prejudicial to uniformity."
(*Amrita Bazar Patrika, July 17, 1966*)

(6) "The suggestion that no specialization should begin before the first ten years of schooling seems based on sound reasoning but to transfer the specialized pre-university course to schools would be undesirable in existing and foreseeable conditions. The Commission's plans for the change are complicated and confusing, but the net effect may be a return to the old system of general school education of ten years, followed by two years of partial specialization in preparation for the first degree course."

"But these preparatory years, instead of being spent in a college as previously, will now be added to the school stage. This is a task for which the schools are not and are unlikely to be equipped without a drastic and unnecessary change in the whole educational system ; it might be simpler and better to revive the intermediate course in colleges."
(*Statesman, July 3, 1966*)

14. Tenth Conference of the State Education Ministers (1967)

(*a*) The educational structure should have the pattern of 10+2+3.

(*b*) The ten year school (to be designated as the High School) should be adopted in all States. This will provide a common programme of general education and specialisation will be postponed till after class X.

(*c*) The next stage of two years (to be designated as the Higher Secondary stage) should include two years of general education. The vacational courses at this stage (these should broadly cover 50 per cent of the total enrolment) would be spread over varying duration (1-3 years) depending upon the nature of the course concerned.

(*d*) The duration of the courses for the first degree in arts, commerce and science should be 2 years after the higher secondary for general courses. It should be three years for general (honours) and special courses.

15. The Thirty Third Meeting of the Central Advisory Board of Education (1967)

The Board considered the draft Statement on the National Policy on Education prepared by the Committee of the Members of Parliament and among other things, approved that the pattern 10+2+3 should be adopted by 1975.

16. National Policy on Education (1968)

"It will be advantageous to have a broadly educational structure in all parts of the country. The ultimate objective should be to adopt the 10+2+3 pattern, the higher stage of two years being located in schools, colleges or both according to local conditions."

Chapter 4

The Profile of the Pattern

The National Policy on Education has laid down the bare outline of the structure in three meaningful numbers : 10+2+3. It does not spell out its magic. It does not define its salient features. The conferences, committees and commissions which directly led to the formulation of the policy on structure provide a mine of information regarding the characteristics of the pattern. This knowledge is necessary for any reorganization. The most informative of the reports is that of Education Commission.

The most important feature is its flexibility. This flexibility helps the educational development in any part of the country according to the local conditions, available resources in man, material and money and the dynamism of the people. There is every freedom to any innovative exercise or fundamental reorientation. There is unlimited scope for mutual adjustment of both education and overall development strategies to the ends of increasing employment opportunities and of becoming sensitive to social and economic changes.

The New Pattern does not direct about the structure that precedes it, *i.e.*, the pre-primary stage or what follows it, *i.e.*, the postgraduate stage. It is also silent about the substructures within the 10-year schooling. The Education Commission provides the following details of a wider spectrum :

1. A pre-school stage of one to three years ;
2. A primary stage of 7 or 8 years divided into two sub-stages — a lower primary stage of 4 or 5 years and a higher primary stage of 3 years ;
3. A lower secondary or high school stage of 2 or 3 years in general education or 1 to 3 years in vocational education ;
4. A higher secondary stage of 2 years of general education or 1 to 3 years of vocational education ;
5. A higher education stage having a course of 3 years or more for the first degree followed by
6. A course for a second or research degree of varying duration.

The Education Commission's approach to structural reform has been very flexible, because it did not believe in the imposition of a uniform pattern of school and college classes in all parts of the country. But uniformity can be of many shades. The Education Commission's reference to the word 'uniformity' appears to have a rigid connotation. On the other hand the National Policy on Education just refers to a 10+2+3 pattern. It does not even say about the sub-stages or sub-terminal points. From this angle the New Pattern preserves adequate flexibility.

It may not be possible for a large number to reach class X. Under the present circumstances, despite the Directive Principle laid down under Article 45 of the Constitution, many will be forced to discontinue their studies even before "they complete the age of fourteen years". To avoid wide-based pyramidal structures which happen to be costly, schools of different vertical heights will have to be planned. Among the primary schools, about two out of three will consist of only lower primary stage, while the remaining—about one in three—will provide education both to the lower primary and the higher primary stages. Among the secondary schools—about three-fourths—would provide education up to Class X and may start from any convenient grade lower down, while the remaining—about one-fourth—will be higher secondary schools.

Where do the students go and how many of them as they step off the stream? The Education Commission has tried to visualize the scene and answer the question in the following manner:

"At the end of the primary stage, a proportion of students will step off the school system and enter working life (about 20 per cent); some more will step off the stream of general education into different vocational courses whose duration may range from one to three years (about 20 per cent); and the remaining will continue further in the stream of general education (about 60 per cent); the ten years of school education will be followed by an external examination; the standard at the end of the ten years will be broadly comparable in respect of curriculum and level of attainment to the national standard laid down for the end of this stage; at the end of the ten years of school education, a proportion of students will step off the school system and enter working life (about 40 per cent); some more will step off the stream of general education and enter vocational courses whose duration will be one to three years (about 30 per cent); and the remaining will continue further in the stream of general education whose duration will be one and ultimately two years (about 30 per cent)."

The following features of the pattern may need focus while reorganizing the system:

"(1) The system of 'streaming' in schools of general education, which now begins in Class IX, should be given up and no attempt at specialization should be made till after Class X. This will need a considerable reorganization of the existing curricula of the higher secondary schools.

(2) The idea that every secondary school should be raised to the higher secondary status should also be abandoned. It has been possible to upgrade all the high schools in Delhi because it is a metropolitan area. Such wholesale conversion of schools has also been carried out in Madhya Pradesh; but the cost has been very heavy in terms of deterioration of standards as well as of financial outlays. In a country where rural areas predominate, it is unwise to try to raise *every* high school to the higher secondary status. We visualize, as a permanent feature of the educational system, secondary schools of two types: high schools providing the ten-year course described above, and higher secondary schools which in due course will offer a twelve-year course of education. With a view to concentrating resources and raising standards effectively, it is only the bigger and better type of high schools that should be upgraded. If one-fourth of the total number of high schools were raised to the higher secondary status, they would meet all the needs of the situation, even on the assumption that there would be no pre-university courses in the colleges in future. An essential requirement is that the institutions should be large, centrally located and equitably distributed between the urban and the rural areas. It would also be desirable to review the status of all existing higher secondary schools, and where these are too small and uneconomic or of very poor quality, they may be reconverted into high schools.

(3) There should be, as a rule, no integrated course of studies beginning with Class IX. Classes IX and X will now form part of the first ten years of general education, and Classes XI and XII (and during the transitional period, Class XI only), which will provide for specialized studies in different subjects at the higher secondary stage, will become an independent, self-contained unit like the Sixth Form in England.

(4) There will be an external examination at the end of Class X to mark the termination of the first ten years of general education. Therefore, a student studying in a ten-year high school will have to appear for two external examinations—at the end of Classes X and XI—at the interval of one year. This handicap will be removed with the extension of the higher secondary course to two years."

The flexible character of the National Policy on Educational Structure is also evident in the resolution that the higher secondary stage of two years be located in schools, colleges or both according to local conditions. The issue remains open. The Education Commission, had, however, earlier recommended its location in schools and advised the transfer of the pre-university courses from the universities and colleges to schools :

> "We attach great significance to the location, *exclusively* in the schools, of all the courses that form part of higher secondary education. When the higher secondary pattern was first recommended, the pre-university course was introduced only as a *transitional* measure. Unfortunately, the transition threatens to become permanent, and even today about 40 per cent of the total enrolment in the universities and affiliated colleges is in the intermediate or pre-university courses. This is a great evil from all points of view. It is bad for the universities and colleges as their resources and energies are being improperly utilised and even wasted in doing what is essentially the work of secondary schools. It is bad for the secondary schools because they are weakened by being deprived of a stage which could give them good teachers and facilities, with the result that they are obliged to do a good deal of work which ought to have been done at the primary stage. It is bad for the students because they are now required to enter universities at too early an age, and compelled to learn through methods of higher education which are beyond their capacity and more suited to maturer students. We therefore, strongly recommend that the pre-university course, irrespective of its duration, should first be transferred to the school on a high priority basis."

The Commission recommended the following measures to bring about this transfer :

(1) The responsibility for transferring all pre-university or intermediate work from the universities and affiliated colleges should be placed on the University Grants Commission. A beginning should be made with the universities and the post-graduate colleges which should be required to shed this work as soon as practicable. This policy should then be extended to degree colleges, where the enrolments at this stage should be frozen at a certain time, after which the colleges would be required to taper them off as their enrolments at the undergraduate stage begin to grow. Beyond the fourth plan, the opening of new pre-university or intermediate classes in the universities and affiliated colleges should not be permitted. The University Grants Commission and the State Governments should be requested to reduce gradually their allotment of funds earmarked for this stage of education.

(2) While these steps are being taken, arrangements should be made to start the higher secondary class or classes in selected schools. The responsibility for making these arrangements should be placed on the State Education Departments, which should work out a proper programme for the purpose in consultation with the universities in the State. Good high schools should be selected and given adequate grant-in-aid to start a higher secondary class or classes as a self-contained unit which is not to be integrated with the lower classes, so that students from other high schools may join it. A scheme of this

type has been tried in Mysore and found to work well. Recurring grants for this purpose should be made available to each selected institution one year in advance so that the preliminary arrangements can be satisfactorily completed in time.

(3) Most of the Boards of Secondary Education will have to be reconstituted to accept the responsibility for the higher secondary stage, and in some cases, their Acts will have to be amended."

This programme of transfer will not involve any wastage. The universities and the affiliated colleges from which the pre-university courses will disappear will be able to utilize the existing facilities so released for the purpose of expanded admissions in undergraduate classes.

It is of historical interest, now, when we have decided to bring about the structural reform without any delay, that the Education Commission proposed that the duration of the Higher Secondary Course should be lengthened to 2 years through a phased programme spread over 20 years and divided into two stages. The first stage, covering a period of five years, should be devoted to securing a better utilization of existing facilities and to making the needed preparation for a successful implementation of this important reform. The second stage will cover a span of fifteen years.

At first, one may wonder why a long period of 20 years will be needed to lengthen the duration of secondary education by 2 years. But the reasons given by the Commission are very convincing. Even then the implementation of the New Pattern cannot wait so long. Action is the crying need. Time will have to be cut short. A new strategy must inform the phasing technique. The following reasons will provide analytical grip on the problem and a vantage point to scan the odds :

(1) The first reason is that of priority. There are three possible choices in school or higher education in the next five years : qualitative improvement of general education (with special emphasis on raising the salaries and qualifications of teachers) ; vocationalization of secondary and higher education ; or lengthening of the duration of the total period of general education. In our opinion, the first two of these are of far greater urgency and may absorb all the additional resorces likely to be available during the next five years.

(2) The second reason is our anxiety for improving the utilization of the time already available before the duration of the school course is lengthened. We would emphasize that a hasty addition of one year to secondary education will not lead to qualitative improvement unless there is a proper climate of hard work in the educational institutions. Moreover, 'time' is only *one* of the 'inputs' that can bring about improvement in quality. There are several other 'inputs' that are necessary for raising standards, *e.g.*, motivation of students,

competence of teachers, upgraded curricula, better methods of teaching and evaluation, improved textbooks and teaching materials and adequate equipment, buildings and other physical facilities. Qualitative improvement will result from the cumulative effect of all these factors. If they are of the right kind, an increase in the duration will certainly add to the improvement in quality ; but if they are not, the extension of the course by an year may only mean a still further increase in existing wastage.

(3) The third reason is related to the need to make advance preparation for the lengthening of the duration. In our opinion, it will be nothing short of wasting scarce resources if State Governments embark on this programme without adequate preparatory work.

Uniformity will have to be given a priority over quality. Vocationalization will be part of the transformation, upgraded curricula, corresponding textbooks, adequate arrangement for teaching of science, facilities for work-experience, competent teachers, buildings and other physical facilities, may come in the way of a successful implementation. But these problems will have to be handled on an emergency basis. Advance preparation must need time. But time is a relative factor and it will depend upon how long we can wait away from the main stream of development. The Central Advisory Board of Education in its last meeting held in 1972 reiterated its earlier recommendation adopting the uniform pattern of 10+2+3 and urged that it should be implemented in all parts of the country by the end of the Fifth Plan.

The existing educational systems in different parts of the country have been in general based on traditional structures of general education at the three levels, with provisions, often inadequate, for technical and vocational education. The idea of diversified courses and vocational streams got linked up through a process of successive additions. The education system thus grown up finds itself in sufficiently developed or missing from the point of view of real training requirements or of the need to bridge the gap between learning and productive employment. Artificial barriers continue to exist between various types of education and sometimes, between various stages of education. The new pattern proposes to make the education better integrated, more comprehensive and more diversified after a certain point (Class X), so that it can adapt to the realities of social and economic change.

The New Pattern will have to be designed and adapted to provide a diversified range of educational experiences and to ensure that pupils terminating at intermediate points are prepared for entry into the world of work. In such a structural change two elements are of key significance. Firstly, the scope and purpose of general education is broadened by providing common learning experiences and including science, maths. and social studies for all so that the students may explore and test thus abilities and aptitudes for future courses and careers. Secondly, the diversification and vocationalization at the higher secondary level (Classes XI and XII) may serve, on the one hand, the needs of the terminating students so that the educational output may be matched with the economy's requirements of middle-level skills and, on the other hand, the need of those whose ability would carry them to higher education.

At the end of the primary stage it will be necessary to provide adequate facilities for suitable forms of vocational education, either on a part-time or on a full-time basis for about 20% of the students who are expected to leave the educational system and join the working life. At the higher secondary level the vocational courses will have to be expanded to cover about half of the total enrolment. A large variety of terminal course will be needed. They will include courses for training of teachers for primary and pre-primary classes, courses for training para-medical and health personnel, courses for secretariate work and courses for various industries.

The principal object of the change in structure and duration is to raise the standard of education and quality of performance. In this context, an appropriate note of caution from the Education Commission may help in the raising of sights.

"The principal object of the changes in structure and duration which have been discussed above is to raise standards. In this context, however, it is essential to note that structure and duration play a significant but secondary role in improving standards.

Unfortunately, the most serious weakness of the existing educational system lies, not in its structure, but in its feebleness. We are getting relatively much less than what we should from the system as it exists and the resources that go into it. No reorganization of structure or addition of time can remedy this basic weakness.

It is, therefore, necessary to place a much greater emphasis in all our plans of educational reconstruction on programmes of intensive utilization of facilities available, and on improving the extent and quality of the inputs other than time, and particularly on the improvement of teachers. These will yield immediate and far-reaching results."

This chapter may now be concluded by briefly glancing at the characteristic features of the New Pattern.

1. There will be a common 10-year schooling.
2. It provides for 12 years of schooling in place of 11 which is the usual school pattern at present.

3. The first degree course will be of three year duration after 12 years of schooling.
4. The first university degree will be obtained after 15 years of study.
5. It provides for adopting a selective approach in upgrading the existing higher secondary schools.
6. It provides for the compulsory teaching of Mathematics, Science, Social Studies, Trade or Craft, moral education in Classes IX and X.
7. It provides for two levels of courses in various subjects—advanced level and ordinary.
8. It takes care of individual differences of students by providing for grouping of students based on their attainment in different subjects. It will be possible to have a student during advanced level work in one subject and ordinary level work in another.
9. It aims at establishing a close link between the school and the environment by modifying the present emphasis on theoretical aspect of education.
10. It provides for appropriate opportunity to students to take up vocational courses.
11. It provides for specialization only after 10 years of schooling in Classes XI and XII.
12. It aims at reducing pressure on the universities by providing for alternative courses and training facilities at higher secondary stage.
13. It is intended to raise the standard of school education which in turn will help the universities to raise their first degree standard higher.

Chapter 5

The Curriculum

Widespread Dissatisfaction with the existing Curriculum. The Education Commission 1964-66 stated, "The school curriculum is in a state of flux all over the world today. In developing countries, it is generally criticised as being inadequate and outmoded, and not properly designed to meet the needs of modern times. Even in an educationally advanced nation like the U.S.A., where the traditional curriculum had been radically transformed long ago under the impact of progressive education the content of the school courses is being challenged by several scholars and university men; and a new reform movement has been started which may bring sweeping curricular change in school education." This widespread dissatisfaction with the curriculum is due to many causes.

1. *Explosion of Knowledge.* In the first place, the tremendous explosion of knowledge in recent years and the reformulation of the basic concepts in the physical, biological and social sciences has brought into sharp relief the inadequacies of existing school programmes. The gulf between the schools and the university in major academic disciplines, which was always wide has become wider still with the rapid advance of science.

2. *Rethinking on General Education.* Secondly, there has been a rethinking in educational circles about the nature and duration of the education that is imparted in ordinary secondary school. Expert opinion now generally favours the period of general education and the postponement of specialised study to a later period in the secondary school course.

3. *Dynamic and Stimulating Methods.* Again, with the necessity of including more and more significant items in an already over-packed school curriculum it is realised that there is a good deal of useless educational lumber in the school courses which can be safely discarded, and that more dynamic and stimulating method can be developed for presenting essential knowledge. All these factors are responsible for the increasing pressure for the reform of the school curriculum.

"Against the background of the striking curricular developments that are taking place abroad, the school curriculum in India will be found to be very narrowly conceived and largely out-of-date. Education is a threefold process of imparting knowledge, developing skills and inculcating proper interests, attitudes and values. Our schools (and also our colleges) are mostly concerned with the first part of the process—the imparting of knowledge—and carry out even this in an unsatisfactory way. The curriculum places a premium on bookish knowledge and rote learning, makes inadequate provision for practical activities and experience, and is dominated by examinations, external and internal. Moreover, as the development of useful skills and the inculcation of the right kind of interests, attitudes and values are not given sufficient emphasis, the curriculum becomes not only out of step with modern knowledge, but also out of tune with the life of the people. There is thus urgent need to raise, upgrade and improve the school curriculum."

"Most of the curricular revision attempted so far has been of an *ad hoc* character—not generally preceded by careful research, not based on adequate expertise and not followed by such necessary supporting measures as the preparation of learning materials, the orientation of teachers or the provision of the needed physical facilities. What is worse, the curricula are prepared at the State level and are prescribed uniformly for all the schools in the State. Such a procedure cramps the freedom of headmasters and teachers and renders experimental work almost impossible. It also makes curriculum revision very difficult and infrequent. This problem which faces education at all stages is particularly acute at that school level. It is this weakness of school education that compels colleges to spend time on what is essentially school work ; and the content of higher education cannot be adequately deepened until the school curricula are upgraded and made more challenging."

Essentials of Curriculum Development. The Commission suggested :

1. *Research in Curriculum.* The first is the need for systematic curricular research so that the revision of the curriculum may be worked as a well co-ordinated programme of improvement on the basis of the findings of experts instead of being rushed through haphazardly and in a piecemeal fashion, as often happens in many States today. Facilities for such research should be established in the universities, in the secondary training colleges in the State Institutes of Education and in the State Boards of School Education. It would also be advantageous to have some experts in curriculum on the staff of the State Boards of School Education who would work in close collaboration with the State Evaluation Organizations and the State Institutes of Education.

2. *Preparation of Textbooks and Other Teaching Aids.* Basic to the success of any attempt at curriculum improvement is the preparation of suitable textbooks, teachers' guides and other teaching and learning materials. These define the goals and the content of the new programmes in terms meaningful to the school, and as actual

tools used by the teacher and pupil, they lend substance and significance to the proposed changes.

3. *In-Service Education of Teachers.* In addition to this, it is necessary to make the teacher understand the chief features of the new curriculum with a view to developing improved teacher competence, better teaching skills, and a more sensitive awareness of the teaching-learning process in the changed situation. Accordingly, an extensive programme of the in-service education consisting of seminars and refresher courses, should be arranged to orient the teachers to the revised curriculum.

4. *Relating Curricula to Available Facilities.* A curriculum should be related to the quality of teachers, the facilities available in the school and the needs of the students with reference to their socio-economic background. These vary immensely from one institution to another. Consequently, a single State curriculum designed to serve the needs of average school ceases to be meaningful for the large variety of institutions and fails to provide an adequate challenge to the better ones. The solution lies in making it possible to devise and adopt curricula suited to their own needs and to vie with one another in upgrading them.

5. *Freedom of Schools.* Schools should be given the freedom to devise and experiment new curricula suited to their needs. A lead should be given in the matter by training colleges and universities through their experimental schools.

6. *Preparation of Advanced Curricula.* Advanced curricula should be prepared by State Boards of School Education in all subjects and introduced in a phased manner in schools which fulfil certain conditions of staff and facilities.

7. *Formation of Subject Teacher Associations.* The formation of subjects will help to stimulate experimentation and in the upgrading of curricula. The State Education Departments, State Institutes of Education and NCERT should help the Associations in their educational activities and co-ordinate their work.

Standards of Attainment at the Different Stages. Though the curriculum of the first ten years of general education covering seven years of primary education (four years of lower primary and three years of upper primary) and two or three years of lower secondary education should be organized as a continuous programme of studies, the standard of attainment at the end of each sub-stage in the total course should be clearly indicated. These standards should be defined in terms of the knowledge, skills, abilities and attitudes to be developed with reference to the overall objectives of school education.

Special Features of Curriculum at Each Sub-Stage

(1) **Lower Primary Stage** (Classes I—V)

(*a*) One language—the mother-tongue or the regional language

(*b*) Mathematics

(*c*) Study of the Environment (covering Science and Social Studies in Classes III and IV)

(*d*) Creative Activities

(*e*) Work-Experience and Social Service

(*f*) Health Education

(2) **Higher Primary Stage** (Classes VI—VIII)

(*a*) Two languages—(*i*) the mother-tongue or the regional language, and (*ii*) Hindi or English.

Note. A third language (English, Hindi or the regional language) may be studied on an optional basis.

(*b*) Mathematics

(*c*) Science

(*d*) Social Studies (or History, Geography and Civics)

(*e*) Art

(*f*) Work-Experience and Social Service

(*g*) Physical Education

(*h*) Education in Moral and Spiritual Values

(3) **Lower Secondary Stage** (Classes IX—X)

(*a*) Three languages—In non-Hindi speaking areas, these languages will normally be (*i*) the mother-tongue or the regional language, (*ii*) Hindi at a higher or lower level, (*iii*) English at a higher or lower level. In Hindi-speaking areas, they will normally be (*i*) the mother-tongue or the regional language, (*ii*) English (or Hindi, if English has already been taken as the mother-tongue), and (*iii*) a modern Indian language other than Hindi.

Note. A classical language may be studied in addition to the above three languages on an optional basis.

(*b*) Mathematics

(*c*) Science

(*d*) History, Geography and Civics

(*e*) Art

(*f*) Work-Experience and Social Service

(*g*) Physical Education

(*h*) Education in Moral and Spiritual Values

Curriculum at the Lower Primary Stage

The first two classes of the primary school should be graded as a single unit, and wherever possible, this arrangement should be extended to cover Classes III and IV. The proposed curriculum for these classes is very simple and reduces the load of formal subjects. Only language and elementary mathematics are to be specially emphasized with a view to developing the basic tools of learning. The study of the environment will be largely informal in the beginning and will be provided by making the child observe his immediate social and physical surroundings and talk in class about what he observes. In Class III environmental studies will gradually lead to social studies and science which may now be treated as regular subjects, but in a very elementary manner. While the activity method will permeate all teaching, special activities in the form of music, art work, dramatics and handwork should be organised for creative self-expression. Health education will stress the formation of good health habits. Work-experience will consist largely of handwork and social service will involve simple activities like cleaning the class-room, decorating the school, etc.

One important aspect of education at this stage, is reading with understanding. If proper foundations for this are not laid at this level, the entire future education of the child will receive an irreparable setback. Adequate attention has not been paid so far to research in beginning reading, to the evolution of proper methods of teaching reading to young children with phonetic scripts which the Indian languages have, to the preparation of graded vocabularies, to the designing of primers and readers for Class I, and to the evolution of tests of reading readiness or competence. It has not yet been possible to organize the proper training of teacher-educators at the primary level in these matters, and the average primary teacher generally tries to teach reading in a rule-of-thumb manner. It is the neglect of this crucial area that is responsible for a good deal of the stagnation at the lower primary stage. A study of these problems should be taken up in earnest and that a vigorous programme of improving reading instruction at the lower primary stage should be developed in all parts of country.

Curriculum at the Higher Primary Stage

When the pupil enters the higher primary stage, learning will become more systematic with greater stress on discrete subjects The curriculum will broaden in respect of subject-coverage and deepen in respect of content. Teaching methods will become more systematic and standards of attainment more specific and definite than before. A second language either Hindi or English has now to be introduced so that a working knowledge in one of the two link languages may be attained by the end of Class VII. While only two languages will be compulsory at this stage, a pupil may study three languages—the regional language, English and Hindi—if he so desires, and facilities will have to be provided for the teaching of third language in every school. Mathematics and science will receive greater stress than before. Social studies may continue as an integrated course if competent teachers and the requisite facilities are available ; otherwise the study of history, geography and civics should be taken up as separate disciplines. Art and crafts will figure more prominently, the latter as a part of work-experience, and physical education and games will have their due place. A period or two a week should be allotted to education in moral and spiritual values in an organized attempt to develop the character of the pupils and inculcate in them a respect for religions other than their own. Social service activities will now include participation in the life of the local community.

Curriculum at the Lower Secondary Stage

The subjects that were studied in Classes V, VI and VII will be continued at the lower secondary stage ; but with the increasing maturity of the students, their study has to gain in rigour and depth. Subject competence in science is particularly important in view of the phenomenal advances made in recent years in scientific knowledge, history, geography and civics and present day problems will be taught separately with such correlation as is natural and necessary. A third language—Hindi or English or a modern Indian language—will be introduced on a compulsory basis. Work-experience will be organised.

Compulsory Teaching of Science and Mathematics for Ten Years

Science and mathematics should be taught on a compulsory basis to all pupils as a part of general education during the first ten years of schooling. In addition, there should be provision of special courses in these subjects at the secondary stage, for students of more than average ability. This programme can become meaningful and useful only if the science curricula are reorganised and brought up to date, the methods of teaching are vitalised and proper facilities are provided for the teaching of the subject.

Science in the Primary School. The aims of teaching science in the primary school should be to develop proper understanding of the main facts, concepts, principles and processes in the physical and biological environment. Both deductive and inductive approaches should be utilised to unravel these ideas, though more emphasis may be laid on the deductive approach or the use of the scientific method.

In the lower primary classes, the focus should be on the child's environment—social, physical and biological. In Classes I and II, the accent should be on cleanliness, formation of healthy habits and development of the power of observation. These should be emphasised again in Classes III and IV, but the study should include personal hygiene and sanitation. The child may also be introduced to formal areas of science, such as the plants and animals in his surroundings; the air he breathes, the water he drinks, the weather that affects his daily life, earth he lives on, the simple machines that are being used in his environment, the body of which he should take care and the heavenly bodies he looks on at night. School gardening is an activity that should be encouraged especially at this stage, as it provides pupils with direct and valuable experience of natural phenomena.

The Commission also recommended that, in Class IV, children should be taught the Roman alphabet. This is essential as the internationally accepted symbols for the units of scientific measurement and symbols for chemical elements and compounds are written in the Roman alphabet. Whatever one's language and the word for water, the chemical symbol for it is always H.O. And it is far more than a symbol, it provides an insight about the nature of water. Again, a knowledge of the Roman alphabet makes possible the use of maps, charts and statistical tables on an international scale. How expensive and time consuming it will be to make available this material in all the local languages !

At the higher primary stage, the emphasis may shift to the acquisition of knowledge together with the ability to think logically, to draw conclusions and to make decisions at a higher level. Science should now be taught as physics, chemistry, biology, geology and astronomy. The allocation of these subjects among the three classes is suggested below ; but other combinations may be tried depending upon the level of the students and local conditions :

Class V	Physics, Geology, Biology.
Class VI	Physics, Chemistry, Biology.
Class VII	Physics, Biology, Chemistry, Astronomy.

The general science approach to the teaching of science which has been widely adopted at the elementary stage during the last ten years has not proved successful as it tends to make science appear somewhat formless and without structure and runs counter to its methodology. A disciplinary approach to science learning would, it is felt, be more effective in providing the necessary scientific base to young people. The introduction of astronomy is specially commended, as it plays an important part in imparting good science education and in developing a rational outlook. From Class V onwards the Indian almanac should be studied by observation of the night sky.

Every primary school should have a science corner or a room to keep specimens, models and charts with the necessary storage facilities. A minimum of one laboratory-cum-lecture room should be provided in every higher primary school.

Science in the Secondary School. At the secondary level, science as a discipline of the mind and preparation for higher education deserves special emphasis. In the lower secondary classes, physics, chemistry, biology and earth sciences should be taught as compulsory subjects for all the pupils. Building on the introductory courses at the earlier stage, they should be made to cover wider areas and go deeper into the content than before. The changing character of the sciences should be the major factor in curriculum development.

Features of the Secondary School Science Curriculum. During the last few decades, the conceptual framework of physics has undergone a drastic change and this should be reflected in the high school physics curriculum. Similarly in chemistry, the stress hitherto laid on memorisation of facts, formulae, processes and compounds should give place to emphasis on the unifying concepts in the subject. It is necessary to highlight the applications of chemistry in industry and daily life and its growing importance in our developing economy. Again the present content of the school course in biology is traditional in nature. The concept of biology as a method of inquiry by means of accurate and confirmable observations, quantitatively and mathematically analysed, and controlled experimentation should be impressed on the minds of the young learners. Earth sciences should be introduced in the secondary school, geology and geography being taught as an integrated subject. There are also many areas in chemistry, physics and biology to which certain topics in the study of earth sciences can be naturally related.

Science at the Higher Secondary Stage. At the higher secondary stage where diversification of studies will take place, science will not be studied on a compulsory basis by all the students. Those who opt for specialisation in the subject may take all three electives from the science group consisting of physics, chemistry, biology, geology and mathematics. But, as has been explained earlier, we are not in favour of rigid groupings and a science based course can provide for a combination of two science subjects like physics and chemistry with an arts subject like economics. Similarly, it is possible for an arts student to take up the study of physics or biology or any of the other subjects in the science group as an elective. Such flexibility in the curriculum will not only help to prevent narrow specialisation, but will also make it possible to extend the benefit of the systematic teaching of science at the higher secondary stage to a much larger number of students.

Science in Rural and Urban Schools. In secondary schools in the rural areas, the linking of education to the agricultural environment can be done through integrated courses which bring out the impact of the physical sciences on biology. In view of the need to apply science and technology to Indian agriculture, it will also be desirable to introduce gradually the pupils in rural secondary schools to the ideas and practices of scientific farming and the activities and skills related to it. Similarly, in schools in industrialised areas the curricula should have a bias towards the technical and industrial aspects of experimental science and its impact on industrialisation. The levels to be attained in the rural and urban schools should be the same and avenues to higher education should be available to students from both types of schools without discrimination.

Study of Mathematics. One of the outstanding characteristics of scientific culture is quantification. Mathematics, therefore, assumes a prominent position in modern education. Apart from its role in the growth of the physical sciences, it is now playing an increasingly important part in the development of the biological sciences. The advent of automation and cybernetics in this century marks the beginning of the new scientific-industrial revolution and makes it all the more imperative to devote special attention to the study of mathematics. Proper foundations in the knowledge of the subject should be laid at school.

Methods of Teaching Science and Mathematics

The Commission suggested :

1. Methods of teaching mathematics and science should be modernised, stressing the investigatory approach and the basic principles.

2. Guide materials should be made available to help teacher adopt this approach.

3. Laboratory work will need to improve considerably.

4. Teachers should be reoriented appropriately.

5. Flexibility should be provided in order to cater to the special needs of the gifted.

Social Studies and Social Sciences

The Commission considers that an effective programme of social studies is essential for the development of good citizenship and emotional integration and suggested :

1. The syllabus should stress the idea of national unity and the unity of man.

2. The scientific spirit and method of the social sciences should permeate the teaching of social studies at all stages.

Work-Experience

Keeping in view the new social order, the Commission recommended that the work-experience should be forward looking and it should take the form of simple handwork in the lower primary classes and of craft in the upper primary classes. At the lower secondary stage, it will be in the form of workshop training, and at the higher secondary stage, work-experience will be provided in the school workshop, farm or commercial establishments. The Commission also suggested that where school workshops could not be provided, suitable kits of tools and materials should be made available at low costs.

Some Essentials of WorkE-xperience Programme

1. The training of teachers.
2. Provision of workshops.
3. Mobilisation of local resources.
4. Preparation of literature.
5. The phased introduction of the programme.

Social Service

The Commission suggested that programme of social service and participation in community development should be organised at all levels as suited to the different age-groups, in a phased manner.

District Organisation for Social Service Camps. The Commission recommended that the labour and social service camps should be run throughout the year in each district by a special district organization set up for the purpose. It is envisaged that these camps will facilitate the organization of Social Service programmes in schools. Initially such programmes may be started on a pilot project in 5% of the districts and extended gradually to the others.

Physical Education

Stressing the need for physical education, the Commission stated that the physical education is important for the physical fitness and efficiency, mental alertness and the development of certain qualities of character. The Commission felt that the programme of physical education as it was in force today, needs to be re-examined and re-designed in the light of certain basic principles of child growth and development.

Education in Moral and Spiritual Values

The Commission realized the need for education in moral and spiritual values and suggested that organized attempts should be made for imparting moral education and inculcating spiritual values in schools through direct and indirect methods with the help of the ethical teachings of great religions.

The Commission recommended the setting aside of one or two periods a week in school time-table for instruction in moral and spiritual values. The treatment of the subject was envisaged to be comprehensive and not divorced from the rest of the curriculum.

Creative Activities

The Commission suggested that a variety of co-curricular activities should be organized to provide pupils with opportunity for creative self-expression.

Art Education. The Commission recommended that Government of India should appoint a committee of experts to survey the present situation of art education and explore all possibilities for its extension and systematic development. Setting up of *Bal Bhavans* in all parts of the country with substantial support from the local community was suggested. Art departments should be set up in the selected university centres to carry out research in art education.

No Differentiation of Curricula for Boys and Girls. The Commission endorsed the recommendations of the National Council for Women's Education that there should be no differentiation of curricula on the basis of sex.

Home Science should be provided as an optional subject but not made compulsory.

Larger provision should be made for music and fine art.

The study of mathematics and science should be encouraged.

Study of Languages

The Three-Language Formula—How It will Operate in Different Classes. The following is the summary of the recommendations of the Education Commission on the Three-Language Formula :

Classes I—IV	The study of only one language should be compulsory. It will naturally be mother tongue.
Classes V—VIII	The study of two languages should be compulsory at this stage. The second language may be either the official language of the Union (Hindi) or the associate official language of the Union (English), so long as it is thus recognized.
Classes IX—X	The study of three languages should be obligatory at this stage and one of these three languages should be the official language of the Union or the associate official language whichever was *not* taken up in Classes V—VIII.
Classes XI—XII	The study of two languages should be compulsory.

Curriculum at the Higher Secondary Stage (XI and XII)

After the completion of the first ten years of schooling leading to the High School Examination, the special interest and abilities of the student will have been generally formed, and, with a good system of guidance and counselling, he can be helped in the choice of his future career and educational course. An extensive and varied programme of vocational education should be provided at this stage. 50 per cent of those who wish to continue their studies beyond Class X are expected to take up full-time or part-time vocational courses and 50 per cent will be in courses of general education. The latter type of courses will be diversified to enable the students to select for special study a group of any three subjects based on the work already done at the lower secondary stage. As in the existing higher secondary scheme, the primary object of the new diversification is to provide opportunities in the last two years of schooling for the development of the special academic interests of the students.

Subject Areas in the Higher Secondary Course (Class XI and XII). The existing one-year higher secondary course will soon have to be recognized to cover a two-year period. The whole question of the higher secondary curriculum will have to be carefully examined and the details worked out by an expert body consisting of representatives of the universities, State Boards of School Education, and State Departments of Education.

(1) Any two languages, including any modern Indian language, any modern foreign language and any classical language.

(2) Any three subjects from the following :
  (*a*) An additional language
  (*b*) History
  (*c*) Geography
  (*d*) Economics
  (*e*) Logic
  (*f*) Psychology
  (*g*) Sociology
  (*h*) Art
  (*i*) Physics
  (*j*) Chemistry
  (*k*) Mathematics
  (*l*) Biology
  (*m*) Geology
  (*n*) Home Science

(3) Work-Experience and Social Service

(4) Physical Education

(5) Art or Craft

(6) Education in Moral and Spiritual Values

Advanced and Enrichment Programmes at Different Stages. The State Education Departments should prepare advanced courses in the different school subjects and good schools should adopt these courses by introducing the changes in one or two subjects in the beginning and gradually covering the entire school curriculum in a phased programme suited to their convenience. Even where it is not possible for a school to adopt an advanced course in a subject for all its pupils in a particular class, it can give the benefit of such a course to the gifted children. In other words, a good school can have two kinds of curricula at a particular stage or even in a particular class—one being the common curriculum for the pupils who are average in ability, and the other being an advanced curriculum for the very bright pupils.

Curriculum Suggested by the Secondary Education Commission 1952-53 (IX to XI)

The present curriculum is inadequate, insufficient, unsatisfactory, uninspiring and unscientific. It is not in conformity with the principles as discussed in a previous chapter. It is narrow in outlook. It fails to satisfy the needs of both the individual and the society. Keeping in view the changed political, economic, social and cultural set-up of the country, the Secondary Education Commission envisaged the following curriculum of a Higher Secondary School.

A. (*i*) Mother tongue or regional language or a composite course of the mother tongue and a classical language.
  (*ii*) One other language to be chosen from among the following:
    (*a*) Hindi (for those whose mother tongue is not Hindi)
    (*b*) Elementary English (for those who have not studied it in the middle stage)
    (*c*) Advanced English (for those who had studied English in the earlier stage)
    (*d*) A modern Indian language (other than Hindi)
    (*e*) A modern foreign language (other than English)
    (*f*) A classical language

B. (*i*) Social Studies—general course (for the first two years only).
  (*ii*) General Science including Mathematics—general course (for the first two years only).

C. One Craft to be chosen from the following list (which may be added according to needs):
  (*a*) Spinning and weaving
  (*b*) Wood-work
  (*c*) Metal-work
  (*d*) Gardening

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(*e*) Tailoring
(*f*) Typography
(*g*) Workshop Practice
(*h*) Sewing, Needle Work and Embroidery
(*i*) Modelling

D. Three subjects from one of the following Groups :

Group 1 (Humanities)

(*a*) A classical language or a third language from A (*ii*) not already taken
(*b*) History
(*c*) Geography
(*d*) Elements of Economics and Civics
(*e*) Elements of Psychology and Logic
(*f*) Mathematics
(*g*) Music
(*h*) Domestic Science

Group 2 (Sciences)

(*a*) Physics
(*b*) Chemistry
(*c*) Biology
(*d*) Geography
(*e*) Elements of Physiology and Hygiene not to be taken with Biology
(*f*) Mathematics

Group 3 (Technical)

(*a*) Applied Mathematics and Geometrical Drawing
(*b*) Applied Science
(*c*) Elements of Mechanical Engineering
(*d*) Elements of Electrical Engineering

Group 4 (Commercial)

(*a*) Commercial Practice
(*b*) Book-keeping
(*c*) Commercial Geography or Elements of Economics and Civics
(*d*) Shorthand and Typewriting

Group 5 (Agriculture)

(*a*) General Agriculture
(*b*) Animal Husbandry
(*c*) Horticulture and Gardening
(*d*) Agricultural Chemistry and Botany

Group 6 (Fine Arts)

(*a*) History of Arts
(*b*) Drawing and Designing
(*c*) Painting
(*d*) Modelling
(*e*) Music
(*f*) Dancing

Group 7 (Home Science)

(*a*) Home Economics
(*b*) Nutrition and Cookery
(*c*) Mother Craft and Child Care
(*d*) Household Management and Home Nursing

E. Besides the above, a student may take at his option one additional subject from any of the above groups irrespective of whether or not he has chosen his other options from that particular group.

A review of the above shows that a student of a Higher Secondary class is expected to take up the following subjects:

(*a*) Two languages of which one should be his mother tongue.
(*b*) A general course in social studies and general science, if he has not taken up these or allied subjects among his optionals.
(*c*) Group of special subjects chosen by him.
(*d*) One craft chosen by him.
(*e*) One additional subject chosen by him from any of the groups irrespective of whether or not he has chosen his other options from that particular group. This subject will be taken up purely at his option.

Three Important Points Regarding Curriculum

In the end three points may be mentioned regarding the curriculum.

First the details of the curriculum and the methods of handling it are even more important than the curriculum itself.

Secondly, the curriculum relates to the academic subjects. Besides these, other co-curricular activities are expected to be given an equal importance.

Thirdly, the curriculum is for the child and not the child for the curriculum.

Difference in Organization of the Curriculum as recommended by the Education Commission and Secondary Education Commission

Curriculum for the First Ten Years. For the first seven or eight years of schooling, there will be an undifferentiated course of general education for all. Of these who continue their studies after Class VIII an estimated 20 per cent are expected to be provided with full-time or part-time vocational education. The remaining 80 per cent of the pupils at school should continue to receive general education for a further period of three years, without any diversification of studies, but with provision of courses at two levels and of options in creative activities and types of work-experience. In other words, for the vast majority of pupils there would be a single curricular stream from Class I to Class X, ending with the first external or public examination, and there would be no 'steaming' or specialisation in this general course.

Scheme of Multipurpose Schools. It will be seen that this proposal is quite different from the scheme of higher secondary education recommended by the Secondary Education Commission, which has been under implementation in certain States during the last ten years. This scheme required a diversification of studies at the end of Class VIII and the provision of a variety of courses for students in Classes IX to XI. A number of multipurpose higher secondary schools have been opened offering different groups of elective subjects to students in the last three classes. Students are divided into streams according to their optional groups, and the opportunities for further education are determined, by and large, in terms of the group selected.

Most of the students who join these schools have only one purpose in view—to pursue their studies further at a university. Consequently, streams like fine arts and agriculture and even the technical stream, which do not lead to popular courses at the university stage are taken up by few students, and the science course is at a high premium. At the present stage of our economy, a multiplicity of expensive courses catering for the special interests of small groups of students cannot be prescribed in schools of general education. An analysis of the different groups of electives in the existing multipurpose schools will show that comparatively few schools have more than three diversified groups, so that one of the main objects for which the schemes of diversification were introduced—to provide a variety of courses to suit the different interests—aptitudes and interests of adolescent students—has not been realised.

One of the major weaknesses in the scheme is that specialisation of studies begins too early. At the age of 13 or 14, the students are classified as belonging to the pre-engineering or the pre-medical section. The streaming of pupils in this way into specialised groups from Class IX upwards is undesirable. That recent world trends in secondary education are in the direction of lengthening the period of general education and postponing diversification and specialisation to the second cycle or senior stage of secondary education. In non-vocational schools a common curriculum of general education should be provided in the first ten years of school education and that diversification of studies and specialisation should begin only at the higher secondary stage.

Important Differences

Secondary Education Commission	*Education Commission*
(*i*) Seven categories of selected subjects.	(*i*) Two categories — Arts and Science.
(*ii*) Restriction on the wide range of optional courses.	(*ii*) Greater freedom and elasticity in the grouping of subjects within the limited range.

Subject Areas in the Higher Secondary Courses. 1. Two year course instead of one at present. Subjects like Logic, Psychology, Sociology, Geology, Work-Experience and Social Services, Craft Education in Moral and Spiritual Values are the new subjects recommended for teaching.

2. Talented and gifted children can have studies in advanced courses and can appear in such examinations even if such a facility is not provided by the school.

3. No diversification favoured at Secondary Stage.

4. Organisation of courses at two levels—ordinary and advanced.

Curriculum Construction and the National Committee (1973)

Need for Curriculum Construction. The Committee pointed out, "The new educational structure does not envisage mere addition of one year to the total period of education or taking away of one class from the collegiate stage to school education or *vice-versa*. The opportunity of reconstructing should be duly utilized by completely reorganizing the curriculum and raising the standard of education at all stages so as to make it internationally comparable. The curriculum should also be in accordance with the current needs of the society, allow mobility of children from one State or Territory to another, and help national integration."

Guidelines for Providing a Broad Uniformity in the Curriculum. The Committee has suggested the following guidelines and a scheme of studies which may be kept in view by the concerned Boards of Education or other expert bodies set up by the State Governments or Territory Administration while preparing the details of the course content.

Elementary Stage

1. The curriculum for Classes I to VIII as developed by the National Council of Educational Research and Training should be adopted all over the country with suitable modifications to suit local requirements particularly in the lower classes.

2. Apart from the purely academic subjects, work-experience and physical and moral education should form an integral part of the school programme and be compulsory for all students.

3. About 15% of the school time should be rationally demarcated for work-experience, about 10% for physical education and about 5% for moral education, so that about 70% of the school time is left for teaching other subjects.

Secondary Stage (Classes IX and X)

1. *General Education.* This stage should provide for a good cause of general education.

2. *No Specialization.* This is too early a stage for any specialization in education.

3. *Core Subjects.* This stage should incorporate a strong core of subjects which should mostly be compulsory for every boy and girl.

Objectives and Proficiency. The committee felt that the causes for Classes IX and X should aim at providing the following achievements and proficiencies.

1. A good competence in language, skill in one language, working knowledge in another and elementary knowledge in a third language.

2. Ordinary level knowledge of modern Mathematics.

3. Ordinary level knowledge of each of the four science subjects, *viz.*, Physics, Chemistry, Biology and Human Biology.

4. Ordinary level knowledge of the four Social Sciences, *viz.*, Geography, Economics, Indian History and Civilization and Civics.

5. Knowledge and practice of moral living.

6. Growth of healthy body.

7. Experience of work in one craft and trade.

8. Knowledge of one additional academic subject or experience of work in one additional craft or trade on optional basis.

Scheme of Studies for Classes IX and X

A. Compulsory Subjects

1. Languages—(*i*) One out of regional languages, mother tongue, English or Hindi to be studied up to Class X and (*ii*) another language of the same group to be studied up to the end of Class IX.
2. Modern Mathematics or Modern Mathematics (Ordinary)
3. Sciences
4. Social Sciences
5. Moral Education
6. Physical Education
7. Craft or Trade

B. Optionals. Any one of the 37 subjects, trades and crafts.

Crafts for Classes IX and X. Any one of the 36 suggestive crafts.

Curriculum at the Higher Secondary Stage (XI and XII). The committee suggested the two streams :

1. Academic Stream
2. Vocational Stream

Academic Stream

Objective and Proficiency. According to the National Committee the objective of the academic stream should be to prepare the student for University or higher education, if he wants to avail himself of such education. Higher education in this context should cover both general education and professional education like Engineering and Medicine.

The proficiencies aimed at this stage are :

(*i*) Further competence in one language and its literature.

(*ii*) Knowledge in four elective subjects of an academic character, the proficiency in at least one of which should be such that it would prepare the student for a good honours course in that subject.

Scheme of Studies

I. Language and literature—One out of the regional languages, English or mother tongue, greater weightage being given to the 'language' part.

II. Four subjects from the following :

1. One or more from among the Indian languages mentioned in the constitution and different from the language offered under I.
2. One or more from among the foreign languages, *e.g.*, English, Russian, German, French, Chinese, Japanese, Tibetan, Nepalese and others (English cannot be offered twice if the same has been offered under I).

3. Modern Mathematics (Advanced or Modern Mathematics—ordinary)
4. Statistics
5. Physics or Advanced Physics
6. Chemistry or Advanced Chemistry
7. Botany
8. Zoology
9. Human Biology
10. Economics or Advanced Economics
11. History
12. Geography
13. Logic
14. Political Science
15. Sociology
16. Psychology
17. Commerce
18. Book-Keeping and Accountancy
19. Home Science or Advanced Home Scien-
20. Physical Education
21. Local Music
22. Instrumental Music
23. Dancing
24. Painting
25. General Agriculture
26. Biology (for Agriculture)
27. Agronomy

III. Participation in at least one of the co-curricular activities, namely, N.C.C., N.S.C., Physical Education, Social and Community Service, etc.

Grouping of Subjects

It is desirable to permit students of the academic stream to choose any four subjects as electives. However, taking into consideration the limitations of practicability and the usual rules of admission of the Indian Universities, the electives may be grouped in appropriate combinations.

Two Levels of Courses. A provision may be made for teaching many of the academic subjects at two levels—advanced and ordinary.

Vocational Stream

Objective. The objective of the vocational stream should be to prepare the student for some vocation in life and thus enable him to choose a course which is terminal in character.

Guidelines for the Scheme of Studies

1. The vocational stream should provide specific job-oriented courses in one vocation carefully chosen out of the areas relating to agriculture, industry, trade and commerce, public services (Secretariat, para-medical, insurance, banking, marketing, education, etc.).

2. The period of the course may vary from 1 to 3 years, depending upon the requirement of the course.

3. The particular vocational courses to be introduced should be locality-oriented.

4. The content of the course should include skills, related technical and scientific and other knowledge understandings, attitudes, safety habits and connected information essential to success in the occupation.

5. The training must be based upon up-to-date analysis of the occupation as practised by successful and efficient workers.

Vocational Guidance. Educational and vocational guidance services must be strengthened in educational institutions so that adequate guidance is provided to the students in the choice of the subjects at the time of admission to Class XI and in finding opportunities for work or employment or further training.

A Draft Scheme as formulated by the Central Board of Secondary Education, New Delhi

Scheme of Studies for Classes IX-X

1 & 2. Two languages out of the following :
Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Marathi, Malayalam, Manipuri, Oriya, Punjabi, Sindhi, Tamil, Telugu, Urdu, English, French, German, Nepali, Portuguese, Russian, Tibetan, Sanskrit, Arabic and Persian

3. Mathematics

4. Sciences (Physical Sciences and Life Sciences) (A unit on better family living be provided under life sciences)

5. Social Sciences (History, Civics, Economics and Geography)

6. Work-Experience :

   Any one from the following :

   1. Spinning and Weaving
   2. Wood Work
   3. Metal Work
   4. Gardening
   5. Tailoring
   6. Embroidery
   7. Leather Work
   8. Pottery (Lacquer Work and Embroidery)
   9. Workshop Practice
   10. Printing
   11. Book Craft
   12. Manufacture of Sports Goods
   13. Commercial Art
   14. Designing-Dyeing and Calico Printin
   15. Radio—Its Mechanism and Repairs
   16. Electric Gadgets and their Repairs
   17. Masonry Work
   18. Paper Craft and Papier Mache
   19. Bee-keeping
   20. Batik and Tie & Dye
   21. Photography
   22. Music (Instrumental)
   23. Sculpture
   24. Plastics
   25. Clay Modelling and Papier Mache
   26. Card Board Modelling
   27. Cane and Bamboo
   28. Meal Preparation
   29. Care of Clothing and Laundering
   30. Typewriting

7. Health and Physical Education and Co-curricular Activities
8. Community Service and Moral Education

Explanatory Notes

1. It is presumed that the third language would have been studied by the candidates in Classes VI to VIII. The

students who could not clear the third language in Class VIII will be examined by the schools concerned at the end of Class IX in the same syllabi and textbooks as would have been studied by them in Class VIII. No candidate, however, shall be eligible to appear at the Secondary Examination of the Board to be held at the end of Class X until he clears the third language.

2. Of the two languages Hindi should be one of the languages unless it has been already cleared in Class VIII.
3. While offering languages for study, the schools will keep in view the Three Language Formula adopted by the Central Government in its National Policy Statement issued in 1968.
4. Syllabus of the languages should emphasise the language skills rather than the study of literature.
5. In case of Sanskrit, emphasis should be given on comprehension and grammar. For Arabic and Persian which are taught as regional languages in the member-schools of the Board in Kuwait and Teheran respectively, emphasis should be on modern Arabic and modern Persian.

Instructional Hours

There should be minimum 45 periods per week assuming the duration of a period to be 40 minutes for instructional work in the schools. The following may be the broad distribution of periods per week for teaching of different subjects. The member-schools may, however, make suitable modification in it, if necessary.

1. Two languages	12 (7+5) periods per week.
Note. Each school may decide according to its requirements the allocation of time between the two languages.	
2. Mathematics, Sciences and Social Sciences	7 periods each per week
3. Work-Experience	6 periods per week
4. Health and Physical Education and Co-curricular Activities; Community Service and Moral Education	3 periods per week
5. Other activities, like Library, debate, etc.	3 periods per week (These periods may be adjusted in the time-table of school according to the needs and the facilities available)

Scheme of Studies for Classes XI-XII

At this stage of education, diversified courses are being provided to enable the students to choose subjects of their choice. A student may offer one or more subjects (up to six) from the list given below. A certificate of pass will be issued in such subjects in which he has been declared successful by the Board. However, for purposes of higher studies, he should offer and pass in the compulsory subject and a minimum of four electives. It will be advisable for the students/schools to ensure combinations, etc., required by institutions of higher learning for particular courses.

I. Compulsory Subject

Any one language from the following :

Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Marathi, Malayalam, Manipuri, Oriya, Punjabi, Sindhi, Tamil, Telugu, Urdu, English, French, German, Nepali, Portuguese, Russian, Tibetan, Sanskrit, Arabic and Persian.

Notes : (*i*) The syllabus of these languages should emphasise the language skills rather than the study of literature.

(*ii*) In case of Sanskrit, emphasis should be given on comprehension and grammar. For Arabic and Persian which are taught as regional languages in the member-schools of the Board in Kuwait and Teheran respectively, emphasis should be on modern Arabic and modern Persian.

II. Electives

A. Academic Stream

1. Modern Indian Languages which emphasise on Literature
2. English Literature
3. Classical Languages with emphasis on literature
4. History*
5. Economics*
6. Civics*
7. Mathematics*
8. Logic
9. Commerce
10. Book-Keeping and Accountancy
11. Economics and Commercial Geography
12. Sociology
13. Geom. Mech. Drawing
14. Physics*

15. Chemistry*
16. Biology*
17. Physiology and Hygiene
18. Geography*
19. Psychology
20. Agriculture
21. Home Management and Consumer Education
22. Music (Vocal) (Hindustani or Karnatak)
23. Music (Instrumental) or Tabla
24. Dancing (Classical or Oriental)
25. Physical Education
26. Painting
27. Sculpture

The courses in above subjects will be,of advanced level but in the case of subjects marked (*) courses at ordinary level may also be provided.

Instructional Hours

Assuming that a minimum of 45 periods per week, a period being of 40 minutes, will be available for instructional work in the schools, the following broad distribution of periods is suggested for teaching of different subjects. Suitable modification may be made by the schools wherever necessary.

1. One language	6 periods per week
2. Four electives	9 periods each per week
3. Other activities like library debate, etc.	3 periods per week

B. Vocational Stream

Vocationalisation of higher secondary education will be a new dimension in the activities of the Board. Since this is a new area upon which the Board is launching and since not much work has been done in this connection elsewhere, the Board will have to devise its own programmes of vocational education gradually.

The course content including the training and practical work should be such as to equip the student very well to get a job or to establish himself as a self-employed person depending upon his choice and circumstances.

It will be ideal if the vocational courses to be introduced in any institution are locality-oriented. They should be selected, as far as possible, on the basis of demand survey to find out the potential for work opportunities in the neighbourhood or the region. It is not intended to duplicate the work that is being done in the existing polytechnics and other vocational institutions.

In view of the above, it is not possible to lay down a universal list of vocational subjects. However, taking advantage of the thinking done by the National Committee appointed by the Government of India to suggest practical measures for introduction of the new educational structure, the following subjects are tentatively proposed. The Board has also had the advantage of the association of the Directorate General of Employment and Training in the matter. The nomenclature of the proposed subjects may perhaps have to be suitably revised keeping in view the actual course content to be formulated for each vocational subject.

1. Secretarial Practice
2. Trade and Commerce
3. Typewriting and Shorthand
4. Salesmanship
5. Interior Decoration
6. Commercial and Decorative Design
7. Dress Making
8. Catering Technology
9. Nutrition and Cookery
10. Nursing
11. Textiles, Clothing and Laundering
12. Farming
13. Horticulture
14. Fruit Preservation
15. Animal Husbandry
16. Graphics
17. Engineering Technology
18. Optometry
19. Photography
20. Draftsman's Course
21. Maintenance Mechanic's Course
22. Book Production
23. Tourism

For the success of the vocational courses, it is necessary that the courses are properly planned and take into consideration the actual requirements of the work of the vocation. In the preparation of the syllabi, therefore, help and assistance will have to be taken from the concerned establishments or organizations. The students will also have to be given practical experience by taking them to the actual places of work as frequently as necessary.

Since different vocations will demand different types of courses, they may not be given equal weightage. That is, there may be a certain vocational subject which may demand full school time of the student and in that event that vocational subject may be treated as equivalent to four elective subjects ; similarly, if half the time available in the school has to be devoted for successful completion of a vocational course, it may be treated equivalent to two elective subjects. Thus, it is not necessary for any student to offer four vocational subjects in Classes XI and XII. He may offer one or more, as the case may be.

It may also be possible to devote for a student more than two years to complete a particular course if the nature of the course so requires. This is necessary to ensure that no half baked student leaves the school unless, of course, there are opportunities for him to join a higher course of vocational education in any specialized institution or college.

It is envisaged that the syllabus of the subjects should be in units.

It is also visualised that there should be facilities for change over from vocational stream to academic stream and vice-versa in deserving cases.

Chapter 6

Vocationalisation of Education

The Education Commission pointed out, "Another programme which can bring education into closer relationship with productivity is to give a strong vocational bias to secondary education and to increase the emphasis on agricultural and technological education at the university stage. This is of special significance in the Indian situation where, as we have pointed out, the educational system has been training young persons so far mostly for government services and the so-called white-collared professions."

Concept of Vocationalisation. Too sharp a distinction must not be drawn between general and technical education. General education should introduce children to the world of work and to an understanding of service and technology. While all general education should contain some technical education of a prevocational nature, technical education should contain an appropriate element of general education.

Vocationalisation—Its Implementation

(1) Lower Secondary Stage

(*i*) In the Industrial Training Institutions, there are courses which are open to those who have completed the primary school. If the age of admission to these courses is reduced to 14, this was originally 16 and now reduced to 15—a large number of students who complete the primary school will be able to enter these courses of industrial training.

(*ii*) Technical high schools and junior technical schools should prepare students for jobs in industry. The courses offered should be clearly terminal and adjusted through the greater use of available time to meet the requirements of the Apprenticeship Act and should lead to trade certificates.

The length of courses may vary from course to course with a strong emphasis on experimental work and applied science in all the schools. A number of these schools should be selected for development as quality institutions.

(*iii*) A large number of students who drop out after Class VII or Class VIII will enter employment in family business, some with the idea of setting up their own small scale industry or trade. A wide range of courses should be available on a part-time basis for them to obtain qualification or to upgrade their skills. The Education Department should set up special sections to help such persons.

(*iv*) A large proportion of the rural boys will join the family farm. They will have to be provided with further education which will enable them to improve their professional efficiency and general education.

(*v*) A large number of girls will leave schools and get married either immediately or a little later. They should be given further education in home science combined with general education.

(2) Higher Secondary Stage

At this stage the Commission has recommended the following types of vocational courses :

(*i*) Courses in agricultural and engineering polytechnics including part-time vocational courses in industry arranged on either day-release, sandwich or correspondence course basis.

(*ii*) Short condensed courses for upgrading skills of those who have entered into employment or the retraining and re-education of those already qualified. These courses should be organised in agricultural and engineering polytechnics.

(*iii*) A large number of courses offered in Industrial Training Institutes require the completion of Class X as a qualification for entry. These courses should be expanded rapidly.

(*iv*) In addition, a wide range of other courses in health, commerce, administration, small scale industries and the services should be developed ranging in duration from 6 months to 3 years for a certificate or diploma qualification. These can also be offered on a part-time basis or through correspondence for those already in employment.

(*v*) The State Departments of Education should create special section for the overall organisation of courses of this nature whether full-time or part-time. In organising such programmes the manpower needs should be taken into consideration and there should be close collaboration with the machinery for vocational guidance and with industry and employers generally.

(3) The other recommendations made by the Commission regarding vocationalisation at the higher secondary stage are as follows :

(*i*) The Central Government should provide special grants to State Governments in the centrally sponsored sector for programmes of vocationalisation for secondary education.

(*ii*) Effective vocational guidance programmes should be organized at district and State levels. The vocational courses at the school stage should be predominantly terminal in character. However, there should be opportunities for exceptionally gifted pupils, through further study, to rejoin the main stream and move higher.

(*iii*) The courses for the training of technicians should be revised in the light of periodic investigations to be carried out in co-operation with industry.

(*iv*) Diploma training should be more practical by including industrial experience. (The Commission have made several recommendations in regard to re-organisation of courses in the polytechnics).

(*v*) Attempts to train for vocational competence in farming through formal schooling in agriculture at primary and lower secondary levels have failed and further efforts should be held in abeyance.

Future Targets of Vocationalisation of Education

At the lower secondary stage (Classes VIII/IX-X) the enrolment in vocational courses should rise to about 20% of the total enrolment in these classes by the year 1986. The corresponding percentage of enrolment at the end of the Third Plan was 2·2.

At the higher secondary stages (Classes XI-XII) enrolment in vocational courses should be raised to 50% of the total enrolment.

Work-Experience—Its Concept as given by the Education Commission

(*i*) Work-experience should be introduced as an integral part of all education. It should involve participation in some form of productive work under conditions approximating to those found in real life situation.

(*ii*) In the lower classes of the primary school, work-experience may begin as simple handwork. In the senior classes, it may take the form of learning a craft. Work-experience at the lower secondary stage can take the form of workshop training. At the higher secondary stage, work-experience should be made available in school workshop and also on farms and in industrial or commercial establishments.

(*iii*) The range of possible activities that can be provided in a programme of work-experience is very wide and the choice will be determined mainly by the availability of materials and trained instructors.

(*iv*) The concept of work-experience is closely related to the philosophy of basic education. What is needed is a reorientation of the basic education programme to the needs of a society that has to be transformed with the help of science and technology. In other words work-experience must be forward looking in keeping with the character of the new social order.

(*v*) While productive work-experience in rural areas should be largely built round agriculture programmes oriented to industry and simple technology should be introduced in a fair proportion of rural schools. In schools where workshop cannot be provided, suitable kits of tools and materials may be manufactured at low cost and made available to the pupils. Gardening should be introduced in as many rural schools as possible.

(*vi*) It should be the declared object of the State policy to increase the facilities for work-experience in industry and agriculture as rapidly as possible and to make them available to schools for the education of the rising generation. While in the transitional stage, the majority of the children will receive experience in the traditional programme of production which the community practices, continuous attempt should be made to bring in science and technology and to introduce the pupils to better ways of performing these traditional tasks.

Its Importance. The system of education in this country has, in spite of various attempts made in the past, remained largely bookish and literary. All educationists are agreed on the need for introducing work-experience at all stages in schools. As the Education Commission have pointed out :—

(*i*) Work-experience can be an effective educational tool.

(*ii*) Work-experience can inculcate among pupils the habit of hard and responsible work.

(*iii*) Work-experience can lead to better social cohesion.

(*iv*) Work-experience can increase national productivity.

(*v*) Also, with growing unemployment among the educated youth of the country, it has become imperative to divert, at appropriate stage, a large number of pupils to courses of a vocational character.

How to introduce these changes in the educational system poses a challenge to the foresight and ability of educational planners and administrators in the country. Happily, the Education Commission have provided us with valuable guidance which should help in the evolution of a realistic policy.

A Working Group on Vocationalisation and Work-Experience traced the history as under :

Basic Education. It may be useful to examine briefly the outcome of efforts made in the past to introduce the teaching of craft, agriculture and other practical subjects in schools. At the elementary stage, the biggest experiment made on a nation-wide scale was that of basic education. After a promising start, the enthusiasm for basic education steadily waned and although the number of basic schools runs into thousands, these schools are, with a few notable exceptions, not very different from the other elementary schools. Later, when it was realised that it might not be possible to convert all schools to the basic pattern, a programme was launched for the orientation of all elementary schools to the basic pattern by introducing in them some of the salient features of basic education.

Even this limited effort has not met with the desired success. Now although the basic education system is intrinsically sound, it could not make much headway mainly on account of lack of adequate preparation, inadequately trained teachers, dearth of teachers' guide books, insufficient equipment and above all an ill-informed and consequently unsympathetic administration.

Multipurpose Schools. At the secondary stage, the Mudaliar Commission suggested the teaching of craft as one of the core subjects in secondary classes. In addition, the Commission suggested the setting up of multipurpose schools with provision for teaching, in addition to the core subjects, one of the several groups of subjects, *viz.*, Humanities, Science, Agriculture, Commerce, Technical Subjects, Fine Arts and Home Science. Over 3000 such schools have been set up. Here again the experience, by and large, in respect of the teaching of practical subjects, has been far from happy. The schools are, in many cases, not properly staffed and equipped. The most serious defect, however, in the curriculum for these schools was that they did not provide adequate training either for entry to universities or to vocations.

Technical High Schools and Junior Technical Schools. Apart from the multi-purpose schools, we have in the country technical high schools (mainly in the State of Maharashtra and Gujarat) and also junior technical schools. These schools impart, in addition to general education, technical education in Classes IX-XI. The training given in these schools is, however, not of a terminal character. There are also about 50 post-basic schools imparting training in agriculture and rural crafts in addition to teaching general education subjects.

Craftsmen Training Programmes. Mention may also be made of the craftsmen training programmes in the Industrial Training Institutes run by the Ministry of Labour and Employment. These training programmes are designed mainly with a view to meeting the demands of industry for skilled workers.

Recommendations of the Commission in the Implementation of Work-Experience

Work-Experience in the Lower Primary Classes (I-IV/V)

(*i*) The Commission have recommended that work-experience in these classes should take the form of simple handwork. The activities suggested are: paper cutting, cardboard work, clay-modelling, spinning (where natural in the environment), simple needle work, simple planting indoors or on plots and kitchen gardening.

(*ii*) This recommendation would be generally acceptable to everybody concerned with the education of children in primary classes. Teachers should be encouraged and given guidance regarding correlation of these activities with lessons in science and arithmetic. But artificial and forced correlation should be avoided.

Implementation of the Scheme of Work-Experience

For effective implementation of this programme, the following action is suggested :—

(*a*) The teaching of handwork in teacher training institutions should be strengthened. Most of the training institutions are now organised on the 'basic' pattern and have facilities for teaching one or two crafts. Yardsticks should be laid down in respect of teaching staff, equipment, hours of work, etc. The syllabi in this subject should be reviewed and the attainment expected of teacher-pupils should be laid down.

(*b*) Arrangements should be made for short-term and in-service training courses for teachers.

(*c*) Present syllabi in handwork in primary classes should be reviewed. A standard list of tools and materials to be supplied to schools in each of the activities should be drawn up. The present arrangements for supply of tools and material should be reviewed.

(*d*) Since there are already facilities for the teaching of craft in a large number of basic schools, every effort should be made to strengthen the teaching of craft in these schools.

(*e*) The State Institutes of Education should be associated closely with this work.

Work-Experience in the Higher Primary Classes (IV/V-VII/VIII)

(*i*) At this stage, according to the Education Commission, work-experience should be the form of learning craft. The crafts recommended are ; cane and bamboo work, leather work, pottery, needle work, weaving, gardening, model making, fretwork and work on farms.

(*ii*) The Commission has pointed out that at this stage it would be necessary to have specially trained teachers. It has suggested that State Governments may review the position regarding training of craft teachers in their States. It may be a good idea to have a combined two year art and craft teachers' course for teachers working at this stage.

(*iii*) At this stage also, there are a number of senior basic schools, where facilities for craft teaching already exist. Before embarking on any large-scale programme, it would be worthwhile to improve the teaching of craft in senior basic schools and other schools having similar facilities.

(*iv*) Here again the State Institutes of Education will have to undertake revision of curricula in schools, draw lists of equipment and materials, suggest procedure for supplying of tools materials, etc.

Work-Experience in Lower Classes (VII/VIII-X)

(*i*) Work-experience at this stage, according to the Commission should be productive and should be provided in real life situations. A large number of trades have been suggested by the Commission. It has also been suggested that work-experience at this stage should take the form of workshop training Accordingly, it has been suggested that a workshop should be attached to every school or a group of secondary schools in a phased manner over the next ten years.

(*ii*) As mentioned earlier, there are already various types of institutions, multi-purpose schools, technical high schools, junior technical schools and post-basic schools which are imparting training in practical subjects. A large number of other secondary schools have facilities for teaching home science, agriculture, etc. In the first instance, the resources of these institutions should be utilised to introduce work-experience. A phased programme will have to be worked out to cover gradually all schools.

(*iii*) Teachers at this stage can be recruited mainly from skilled craftsmen trained by the ITI's, diploma holders in agriculture, etc. The Regional Colleges of Education of NCERT have also started courses for teachers of industrial arts.

(*iv*) Suitable syllabi will have to be worked out keeping in view the fact that work-experience will be one of the subjects taught at this stage. Others being : three languages, mathematics, science, history, geography and civics, art, social service, physical education and education in moral and spiritual values.

(*v*) The State Boards of Secondary Education will prepare syllabi, lists of equipment, and lay down qualifications of teachers and other conditions for the efficient teaching of the subject. They will also lay down methods of evaluation. Estimates of cost, etc., will have to be prepared. On the basis of this, the State Departments of Education will draw a phased programme of implementation.

Work-Experience in Higher Secondary Classes (XI-XII)

(*i*) The Commission has stated that many of the activities at the lower secondary stage would be continued at this stage but the emphasis would shift to workshop practice or actual work-experience in industrial and commercial concerns or on farms. The activities would be oriented towards productive works The skills expected would be of a higher and more exacting nature.

(*ii*) It is suggested that introduction of work-experience at this stage may be postponed to the Fifth Plan because—

(*a*) the setting up of higher secondary schools as envisaged by the Commission is still under debate and may not be effective during this plan, and

(*b*) the success of work-experience at this stage will depend on the skills required at the lower secondary stage, where a beginning is yet to be made.

Meanwhile, it is suggested that work-experience at this stage should be combined with the programme in social service.

General Programmes of Work-Experience

The Education Commission thinks that the range of possible activities which can be adopted to provide productive work-experience is enormous and choice will be determined mainly on the availability of materials and trained instructors. While giving the following list the Commission observes that the list given below is purely indicative and the choice of activities would be made in the light of prevailing local conditions. Included in the list are also activities of special interest to girls or to schools in rural areas :

Lower Primary School

Paper cutting
Cardboard cutting and folding
Modelling in clay or plasticine
Spinning (where natural in the environment)
Simple needle work
Simple planting indoors or on plots
Kitchen-gardening

Upper Primary School

Cane and bamboo work
Leather work
Pottery
Needle work
Weaving
Gardening
Model making
Fretwork
Work on the farm

Lower Secondary School

Wood work
Simple metal work
Basket work
Leather work
Ceramics
Soap-making
Tanning
Preserving
Weaving
Electric repairs
Cookery
Model making
Making simple scientific equipment
Class-room decoration
Carpet making
Book-binding
Lino-cutting
Fabric printing
Tailoring
Toy making
Millinery

Wood carving
Simple farm mechanics
Animal care
Crop care
Care of the soil
Workshop practice

Upper Secondary School

Many of the activities listed above would be continued but the emphasis would shift to workshop practice or actual work experience in industrial or commerical concerns or on farms. The activities would be oriented towards productive work. Skills demanded in a wood work, metal work and agriculture would be of a higher and more exacting nature.

Chapter 7

Implementation of the Programme

As we restructure the educational system we will find no better guide than the "Report of the National Committee on 10+2+3 Educational Structure"*, as its conclusions and recommendations are based on a joint thinking of the State and Union Territory Education Secretaries who were either members of the Committee or were specially invited to participate in the deliberations.

The need for such a Committee arose as the 36th Meeting of the Central Advisory Board of Education held on 18th and 19th September, 1972 resolved that : "The Board reiterates its earlier recommendations made in the 34th Meeting that it is desirable to adopt a uniform pattern of education, *viz.*, 10+2+3, in all parts of the country. ....The Ministry of Education and Social Welfare should take up this matter with the State Government and the University Grants Commission for working out the details."

Almost simultaneously the Committee was appointed. An acquaintance with the report, its strategy to tackle the major problems and its recommendations will be helpful.

Appointment of the Committee. The Government of India, Ministry of Education and Social Welfare appointed the Committee in September, 1972. The Committee submitted its report in November 1973.

Composition of the Committee. The composition of the Committee was as under :—

1. Dr. P. D. Shukla.	Chairman
2. Education Secretary, U.P. (Represented by Shri R.C. Pant, Special Secretary, Education)	Member
3. Education Secretary, Rajasthan. (Shri Mohinder Singh)	,,
4. Education Secretary, West Bengal. (Shri D.K. Guha)	,,

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*The Report is in mimeograph prepared by the Ministry of Education and Social Welfare, Government of India.

5. Education Secretary, Delhi. (Represented by Shri D.S. Misra, Director of Education, Delhi)	Member
6. Education Secretary, Tamil Nadu. (Shri K. Diravian)	,,
7. Education Secretary, Gujarat. (Shri S.M. Dudani)	,,
8. Education Secretary, Assam. (Shri A.K. Chowdhury)	,,
9. Education Secretary, Mysore. (Shri Samuel Appaji)	,,
10. Director (Education) Planning Commission, New Delhi. [Shri A. H. Hemrajani, w.e.f. August 1972 to 31.1.73, date of his retirement and Dr. T.N. Dhar, Joint Director (Education) w.e.f. April 1973 to-date]	,,
11. Dr. R.P. Singhal, Secretary, Central Board of Secondary Education, New Delhi.	Member Secretary

Terms of Reference

(*i*) To suggest practical steps to be taken for implementation of the uniform pattern of 10+2+3 for the school and college classes in all States and Union Territories of the country.

(*ii*) To estimate the cost of implementing the programme.

Working of the Committee. The Committee issued a questionnaire to all the State Governments and Union Territories Administrations eliciting information on various matters relating to the work of the Committee.

The Committee held consultations and discussions with Vice-Chancellors, Principals and teachers of colleges and schools, chairmen and members of the State level committees concerned with the proposed structure, authorities of professional education, educationists, planners and social workers.

The Committee held seven meetings, besides visiting some educational institutions for on-the-spot study of the problem.

The committee held seven meetings.

Format of the Report

The Report comprises IX chapters with 8 appendices as detailed below :

Chapter I traces the history of the appointment of the Committee ; philosophy and purpose of the new structure.

Chapter II describes the existing structure in States and Union Territories.

Chapter III includes the envisaged curriculum at various stages.

Chapter IV discusses the different aspects of vocationalization of education.

Chapter V provides guidelines for the location of new classes XI and XII.

Chapter VI incorporates problems relating to teachers and their training in the new structure.

Chapter VII outlines other practical measures needed to be undertaken for the implementation of this plan.

Chapter VIII points out the financial implications of the scheme.

Chapter IX summarises the observations, conclusions and recommendations.

Appendix 1. Government of India communication to States and Union Territories informing them about the setting up of the National Committee, its membership, etc.

Appendix 2. Note on the introduction of 10+2+3 educational structure.

Appendix 3. Note on the introduction of 10+2+3 educational structure in Kerala.

Appendix 4. Note on the introduction of 10+2+3 educational structure in Mysore.

Appendix 5. Letter dated 19th October 1973 from Secretary, Medical Council of India, New Delhi.

Appendix 6. Resolution of COBSE (Conference of Boards of Secondary Education) passed in its meeting held at Ajmer on 29th and 30th September and 1st October 1973.

Appendix 7. Proforma sent by the Committee to States and Union Territories requesting for some basic data.

Appendix 8. List of persons with whom discussions were held.

In the last two chapters the curriculum and the vocationalization of education have been discussed. These two themes will bound to have a priority. As such these were laid out in a wider perspective and the recommendations of the National Committee were given at the appropriate places. The other important issues discussed by the National Committee are :—

I. Selection of schools for upgrading.
II. Location of classes XI and XII.
III. Examination and evaluation.
IV. Training of teachers and other problems.
V. Production of reading material.
VI. Financial implications.

I. Selection of Schools for Upgrading

The introduction of the new pattern does not visualise that all the existing higher secondary schools should be upgraded. The Education Commission envisaged that about one-fourth of the total number of secondary schools should be raised to contain classes XI and XII. Due care must be exercised while upgrading the schools so that they are evenly distributed. Any decision taken arbitrarily is bound to defeat the very purpose. The National Committee on 10+2+3 Education Pattern has suggested the following guidelines :

1. There should be a balanced distribution of the new institutions on a regional basis all over the State/Territory.

2. Each of the institutions where the 12-year course is proposed to be started should be so located that it can draw from the neighbourhood at least 100 students for the new class XI.

3. Preference should be given to those institutions where postgraduate teachers are already in position.

4. In the case of rural and semi-urban areas preference should be given to those institutions which have hostel facilities.

5. If the institution is privately managed, it should be ensured that its financial condition is sound.

6. It should be an adequately developed institution from the point of view of accommodation, library, laboratories, workshops, playgrounds, etc.

7. Before finalising the selection, the institution should be inspected and reported upon by a suitably constituted committee of at least two educationists and educational administrators.

II. Location of Classes XI and XII

The following considerations should govern :

1. It is absolutely essential that on academic and pedagogic considerations the new classes XI and XII must become part of the school system.

2. Independent units having classes XI and XII may be started if the enrolment in each unit is large enough to make it an economically viable unit.

3. The academic control of these classes and independent units should vest in the Board of Higher Secondary and Vocational Education.

III. Examination and Evaluation

1. There should be two public examinations, *i.e.*, at the end of class X and class XII or at the completion of the vocational course.

2. There may not be any external examination at the end of class X for subjects like physical education, moral education and craft or trade

3. Facilities may be provided to the students in classes XI and XII to prepare and pass an examination in only one or more subjects at one time.

4. The practical examination should contain a viva voce test and passing in it should be obligatory.

5. Improving the quality of the question paper should be treated as one of the most important aspects of the examination reform.

6. There should be a provision for the continuous internal assessment of the students. The marks of the internal assessment should be incorporated in a separate column in the Board's certificate. The internal assessment may be expressed in terms of grades on a five-point scale :—

Grade I	Outstanding
Grade II	Above Average
Grade III	Average
Grade IV	Below Average
Grade V	Poor

7. Provision for an oral test may be made in the language examination.

8. A single Board of Higher Secondary Education may be made responsible for conducting public examinations for both the academic and vocational streams.

IV. Training of Teachers and other Problems

A. Minimum Qualifications

1. The current practice in the country of having graduate teachers with a Teacher Training Degree for classes IX and X should continue.

2. For classes XI and XII only post-graduates should be allowed to teach. Preference may be given to teachers who have obtained second class or at least 45% in their Masters' Degrees in the subject concerned.

B. Training of Teachers

The existing courses for teacher training will need a review in view of the new dimensions added by the new pattern.

C. Training of Teachers for Vocational Streams

Training of teachers for vocational courses will have to be organised with great care and imagination. An expert body may be set up immediately to determine the various requirements in the light of the various courses to be started. The National Council of Educational Research and Training may undertake this task. A mere orientation of selected teachers, *e.g.*, teachers of Agriculture, Commerce and Physics will not serve the desired results. It might be possible to take advantage of the teacher training institutes set up to train teachers of the polytechnics.

D. In-Service Training of Teachers

A comprehensive in-service training programme will have to be undertaken to enable the teachers to help themselves abreast of the latest knowledge, methodology and technology.

E. Safeguards for the Status and Service Conditions of Existing Teachers

It must be ensured that no qualified and duly recruited teacher is thrown out of employment as a result of the introduction of the new course. Similarly their existing emoluments should be protected. A special cell may have to be created in every State Department of Education to safeguard their interests.

V. Problem of Reading Material

The production of new text books, other reading material and teaching aids needs to be specially stressed. The State Bureaus of Text Books should be strengthened in view of the new demands upon them.

VI. Financial Implications (1974-75—1978-79)

The National Committee (1973) has estimated the following expenditure on introducing the new educational structure :

States where it takes 14 years to obtain the first degree in general education	Rs. 32·5 crores
States where it takes 15 years to obtain the first degree in general education	Rs. 17·0 crores
Vocationalization of Higher Secondary Education	Rs. 10·0 crores
Total	Rs. 59·5 crores

Chapter 8

Global View of Educational Patterns

It will be a profitable exercise to engage in a brief survey of educational organizations and their structural patterns as exist in other parts of the world. The patterns will be found to have different shapes and shades. It is natural that they are so, for various factors and forces—social, cultural, political, economic and historic—have moulded them. But in spite of variety in the national past, there are certain elements common to many nations regarding their approach to future. Nicholas Hans said : "...as their ideals of the future are the outcome of universal movements, the problems of education in different countries are similar and the principles which guide their solutions may be compared and even identified." Such a comparative approach will help us to understand the existing educational pattern and the proposed structural reform of our country in a proper perspective. The twin understanding—of other systems and of our system—would provide a broader frame of mind necessary for achieving educational objectives. In a world where people are thrown into ever closer contact with other peoples, a global reference is imperative.

The United States of America is a vast country of 50 States, more than twice the size of India. Population-wise it stands fourth after China, India and the Soviet Union. It was discovered about four hundred years ago. The absence of a feudalistic society and traditional thinking helped the young country to be more experimental in the organization of the school system and to be more free in modernizing educational growth without any discrimination between the rich and the poor. The United States is the supreme example of a decentralized system of school education. It has fifty State systems of education, rather than a national system. Each of the fifty States is autonomous in respect to the organization and control of its education. Each State has delegated a large degree of control to the local school district. This explains the extreme variations in organization, structure, curriculum and administration.

The twelve years of free schooling are divided into different patterns in different communities. Sometimes there are 8 years of elementary and 4 years of secondary schoos. More common are 6 years of elementary schools followed by 2 yealrs of junior high and 4 years of senior high schools. Another pattern following 6 years of elementary schools is 3 years of junior high and 3 years of senior high schools. There are other patterns with minor variations. Whatever the pattern, the high schools are generally comprehensive and coeducational.

They are called 'comprehensive' because they offer many different subjects under one roof. James B. Conant, former President of Harvard University wrote: "The comprehensive high school is characteristic of our society.... It offers in one spot secondary for almost all the high school age children of one town or neighbourhood. It educates the boy who will be an atomic scientist and the girl who will marry at 18; the prospective captain of a ship and future captain of industry. It educates the bright and the not-so-bright. It provides good and appropriate education, both academic and vocational, for all young people within a democratic environment which the American people believe serves the principles they cherish."

At present about one-third of all youth between the ages of 18-21 years are in college. Although the country has one-seventeenth of the world population, it has one-third of the world's college students. To accommodate them there are several types of institutions of higher education. In the U.S.A. higher education is more diverse than in any other country of the world. A bachelor's degree is conferred after 4-year programme and an associate degree after 2-year or 3-year programme beyond the 12-year schooling. Institutions of higher education have several nomenclatures. The junior colleges and community colleges usually offer 2-year programme. They offer general as well as professional courses. The community colleges take care of local needs and arrange for required training. Liberal colleges have 4-year programmes providing instruction in humanities, social sciences and natural sciences. Universities both private and State-controlled offer a standard 4-year degree course. Graduate schools provide both undergraduate and graduate courses. Professional schools provide instructions in medicine, teaching and other professional and technical fields. Most of them are part of the universities.

Canada is also a federation. Responsibility for education rests with the provincial legislatures. In each of the ten provinces the educational system is based on the Provincial School Acts. Children enter an 8-year elementary school generally at the age of 6. The 8-year school is followed by 4 or 5-year secondary school. After successfully completing the school course students may pursue 3 or 4-year college or university programme for obtaining the bachelor's degree. Specialization usually begins in grade IX in the secondary schools. Two-year vocational courses are offered to those who are likely to enter employment at about the age of 15 or 16. Four or five-year course in arts and science, in technology and commerce are usually provided for the increasing number of pupils who are likely to discontinue education at the age of 18 or 19. Besides the 8+4+4 or 8+5+3 plan, other patterns like 6+3+3+4 or 6+6+4, are becoming popular.

Mexico is a federal republic of 29 States. The constitution of Mexico specifies that education shall be national in so far as it shall achieve understanding of Mexican problems, assurance of her economic independence and the continuity of her culture. Primary education lasts six years. Secondary education is divided into two cycles The lower cycle of 3 years helps to develop the knowledge and skills of students required to enter into the upper secondary cycle or a technical vocational school. It also tries to awaken the student's interest to work so that he could be equipped, even if modestly, for some productive activity. The upper cycle of 2 or 3 years offer upper secondary, vocational and teacher training education. Higher education is diversified into university, technical, professional and teacher training institutions. It generally takes 12 years of schooling and 4 or 5 years of higher education to get the first degree.

From North America we turn to Europe, the ancestral continent of the North Americans. Among the European countries, the United Kingdom must first attract notice for its contribution to modern Indian education. In the past the United Kingdom had a feudalistic tradition which demarcated the people into distinct social classes. The nobility and high clergy were at the top, the artisans and peasants at the bottom. The education was the monopoly of the upper classes. This social class hierarchy with education being the concern of higher classes had been for long the common characteristic of feudalistic societies. The two world wars that ravaged mankind led to the spread of democratic ideals of equality and freedom for the common man. The scientific and technological advancement, the accelerated process of industrialization and consequent urbanization helped to increase the importance of the common man and the demand for equalization of opportunities for all in education. In England, the movement towards social equality and greater educational opportunity can be seen in the Education Act of 1944 and subsequent Education Acts, in the government's policy to eliminate separation in secondary education by developing comprehensive schools and in the raising of the school-leaving age for compulsory education.

Although the English school system is national in its main outlines, it is very much a matter of local choice. The administration is a partnership between central and local authorities. The defects of undue regimentation in curricula, textbooks and control of teachers are avoided by the centre ; but the reorganization and planning of the school system on a national basis is the concern of the centre. In England the name "elementary" was dropped in 1945 and the word "primary" took its place. This change in nomenclature was to indicate a psychological break from the old idea of the elementary school with a dead end meant only for the education of the working class. A primary school consisting of five grades is now considered as the first stage in a more extensive programme. The primary school has two divisions : infant school (5—7 years) and junior school (7—11) years.

The Education Act of 1944 recommended a tripartite system of secondary education to cater for the differing interest and ability. The primary education is completed by children at the age of 11 after which they have to appear at the 'eleven plus' examination for getting selected for one of the three types of secondary schools—Grammar School, Technical School and Modern School. The grammar school is highly selective. Its emphasis is on academic subjects. It is considered a preparatory institution for entrance into the universities. The technical school has both academic and technical subjects. The modern school is for those who are not selected for grammar school. It is supposed to provide more realistic and practical education. But there is much criticism against the tripartite system and the selection made at 'eleven plus'. Comprehensive schools are developing rapidly in many parts of England. After completing secondary education of 7 years, a student may enter a college or university for obtaining the first degree at the end of a 3-year course. The educational structure in the U.K. is built on a 5+7+3 pattern. The first degree requires atleast 15 years of education.

France, for more than a century, had a rigid centralized system of education catering for the selected minority and geared to a classical academic curricula. French education has now undergone radical transformation. It has done away with the water-tight divisions between branches at the secondary level, has provided opportunities for choice and transfer, and has tried to give each child an education suited to his aptitude. In the present educational system, efforts have been made towards delegation of powers and decentralization. Technical education is enormously expanding at all levels.

Primary education comprises five grades. The secondary education has two cycles—first (lower) and second (upper). In the first cycle of 4 years, the first two years provide the diagnostic or observational period for selecting or guiding students towards different sections—classical, modern or transitional—as considered suitable according to their ability, aptitude and achievement. A new choice is again made at the end of the first cycle, either towards a 'short' second cycle, or a 'long' second cycle, or towards an active life with part-time education. The short second cycle lasts 2 years and provides either specialized training or a wider type of vocational education. The long second cycle lasts 3 years and leads either to the *baccalaureat* (secondary school leaving certificate) required for admission to institutions of higher education, or to a technician's diploma in industry, commerce or agriculture. The first university degree is a *licence* for which the course is divided in two parts : The first part lasting one year is a general preparatory course and the second part lasting two or three years provides intensive study in selected courses. The structural pattern of education till the first degree is 5+4+3+3 or 4. It takes 15 or 16 years to get the first degree.

The Federal Republic of Germany consists of eleven States known as *Lander*. There is no Federal Ministry of Education, but the Minister of Education in each State is responsible for State education. The structural patterns depend on the educational policy of the States. The education system, in general, begins with an 8 or 9-year primary school. In some States a 10th primary grade is introduced as an experimental measure All children after having spent the first four years (6 years in big cities) of their schooling at a primary school, may go on either to an 'intermediate' school or to a secondary school. The intermediate school usually consists of six grades (V-X) and prepares for medium level posts in offices or firms. The secondary school known as *Gymnasium* is like a higher secondary school or grammar school. It consists of 9 grades (V-XIII) leading to the *Abitur* (secondary school leaving certificate) required for admission to institutions of higher education. There are three types of Gymnasium depending upon the emphasis laid on certain subjects—classical languages or modern languages, or mathematics and science. Bremen, Hamburg and Berlin have established comprehensive systems of schools. There are also advanced vocational schools. The course of studies for the award of first degree varies according to subjects : 4 years in arts, 4 to 5 years in natural sciences. The total period of education prior to the first university degree is 17 or 18 years and the general structural pattern is 4+9+4 or 5.

In Belgium, primary schooling is for 6 years. Primary education is gradually losing its terminal character and becoming a preparation for secondary education. Secondary education consists of two stages—a 3-year lower secondary and a 3-year upper secondary. At the upper secondary level there is greater specialization. Students may select any one of the courses : Latin-Greek, Latin-mathematics, Latin-science, modern scientific A. modern scientific B and modern economics. The system of vocational education is extremely complex as schools have been set up throughout the country to serve local needs. The old apprenticeship traditions have now been broadened to provide a general training and a direct preparation for a specific trade. On completing the secondary education of 6 years, students may enrol for higher education At the universities the courses have two stages : the first called *candidature* is a period of 2 years for general preparation, the second of 2 years is the specialized stage leading to a degree. The structural pattern can be summed up in 6+3+3+4.

The country of Netherlands has a 6-year course of primary education. A new secondary school system has been introduced from 1968. It makes it easier for pupils to switch from one kind of school to another. Another important feature is the 'bridge year', as the first year of each type of secondary school, designed to assist the pupils to adapt themselves to the new secondary school, to help them in the choice of their future education and to facilitate the transition of pupils between schools, if need be. Secondary education is divided into pre-university education, general post-primary education, vocational training and other forms of post primary education. Secondary education as a preparation for higher education (pre-university education) lasts 6 years. Some courses emphasize classical languages, some economic and social subjects and other mathematics and science. The post primary education offers 4 or 5-year courses preparing pupils for secondary vocational training. The duration of a course of studies leading to a degree varies according to the subject chosen. A 3 or 4-year course leads to the *kandiaat* examination. The doctoral degree may be obtained after a further 2 or more years of study.

Norway is continuously adapting its educational system to changing conditions and the traditional 7-year primary school has been gradually replaced by a 9-year compulsory comprehensive school. After completing the 9-year school, students may enter the *gymnas*, the senior secondary school which offers 3 years of education. Specialization begins in the *gymnas* in the form of a choice from five courses ('lines') of study : the Latin line, the science line, the English line, the Norwegian line, and the Biology line. Those who do not want to go for higher education may not join the *gymnas* but instead may enter into the continuation school or the vocational school. The continuation school is a post-elementary school providing general education with some instruction in the practical subjects. Vocational education is provided through the comprehensive basic training in agriculture, industry and handicrafts. There are two types of university degrees—a lower and a higher. The length of courses depends upon the subjects of study. Normally, it takes 4 or more years for obtaining a lower degree and 5 or more years for the higher degree. The structural pattern of education up to the lower degree is 9+3+4.

Sweden's pattern of education is similar to that of Norway. Sweden has also gradually changed its traditional 7-year primary school into 9-year compulsory comprehensive school. Pupils are not assigned to different streams before the 9th grade. In the 9th grade the students are introduced to any one of the 9 streams covering five sectors. Four sectors consist of two streams each—one theoretical and the other practical-cum-vocational—and the fifth sector consists of one stream only. After completing the 9-year school students may enter the *gymnasium* which offers 3 years of education. Students have to make a choice from five courses of study : humanities, social sciences, natural sciences, business (economics) and technical arts. Provision is made for a common core of subjects, being largest in the first year and being gradually decreased with increasing specialization in subsequent grades. Besides the *gymnasium* there are the continuation school and the vocational school. Efforts are now being made to amalgamate the 3 types of schools in a single form so as to build a more uniform secondary school system. In the university the period of study leading to the first degree varies from subject to subject. In the faculties of humanities and natural sciences it requires at least 3 years of study, but in practice the time taken is often 4 to 4½ years. The structural pattern of education up to the first degree may be represented by 9+3+3.

The educational systems and structures of the U.S.S.R. and other Eastern European countries show great similarities and common traits among themselves in contrast to those of Western European countries. In the U.S.S.R. education was, in the past, largely confined to the children of the nobles and the upper class people. The concept of equalization of opportunity in the field of education came after the Russian revolution in 1917. The ideology of the Bolsheviks propagated the abolition of all social class difference and the establishment of a uniform system of education for all.

Free and compulsory education is provided in comprehensive and unitary eight-year school. The eight years are divided into two stages—three years of primary education and five years of lower secondary education. There is a smooth transition from primary stage to secondary stage. The division is only for internal convenience and does not imply any selection or transfer. The curriculum of the eight-year school is the same throughout the country, though each republic of the U.S.S.R. is autonomous. In recent years the most revolutionary change has been brought in the field of primary education by reducing the old four grades into three grades. Russian research has proved that children between 7 and 10 years old are capable of learning more than what they are usually made to learn and are able to assimilate concepts previously considered far too abstract and complex for this age group. It is therefore believed that primary schooling should be at a higher level of difficulty and must have a faster rate of learning. The present new syllabus represents this thinking.

Eight-year schooling does not cover the whole period of secondary education. Two years (and in some places 3 years) of senior secondary stage is further needed to complete the secondary education. Education up to grade X has been made compulsory. After completing the 8-year school the students are free to choose from diversified programmes. Those wishing to have a full secondary education and acquire, at the same time, training for a particular occupation enter the senior secondary polytechnical school. Those who wish to have specialized vocational secondary education enter the technicums.

or specialized secondary schools which offer 3 or 4 years of study and training. Those who cannot wait for long and do wish for a quicker vocational training enter vocational-technical schools. Higher education can be obtained in universities, polytechnical institutes and specialized institutes. The duration of higher education ranges between 4 and 6 years according to different courses. The university courses for the first degree generally last 5 years. The educational structure is based on 8+2+5 plan.

In Asia the most industrially advanced country is Japan. There is a national frame-work of education. Six years of elementary education is followed by 3 years of lower secondary, 3 years of upper secondary and 4 years of higher education. Those who have passed from a lower secondary school are qualified to enter an upper secondary school but a selection becomes essential when the applicants exceed the number of available places. The courses in upper secondary schools are classified as general and vocational. There are comprehensive schools also which have both the courses. In addition to these regular schools, vocational and technical education has assumed great importance in the country. The university offers courses of 4 or more years leading to the bachelor's degree. The school system is on 6+3+3+4 pattern.

There is much to learn from the experience of other countries and the foregoing discussions lend support to the proposed New Pattern of Education. Among a variety of educational patterns briefly reviewed we may find certain common trends. In all the industrially advanced countries the duration of education before the first degree is not less than fifteen years. This period generally comprises twelve years of schooling and 4 years of higher education. Many Asian countries have similar pattern. The U.S.S.R. and other countries of Eastern Europe have a different pattern. Usually 10 years of schooling is followed by 5 years of university education Provision for vocational education is made after the primary level and again after the lower secondary level. At the upper secondary level vocational or technical education is provided among the parallel streams in general secondary schools or is arranged in separate establishments. Diversification of general educational courses begin after the lower secondary level. Science in the curriculum is getting increased prominence. In India, as in most of the other Asian countries, there is need for better adjustment of educational system in view of economic and social changes. An overall process of reform involving structures, content and methods must dominate the educational scene. Piece-meal and partial modifications merely delay the required educational transformation. The global innovative approach is an indispensable condition for internal coherence and smooth functioning, for progress and prosperity.

Chapter 9

To Meet the Challenge

In the foregoing pages an effort has been made to study the New Pattern, how it has fitted well into the frame of the National Educational policy, how it has evolved over the years, how it has been geared to fulfil the avowed purposes and, lastly, how it could be successfully implemented. If a broad consensus happens to be the basis of the formulation of a national policy it becomes the final sanction for its implementation.

But it may not be an unusual occurrence to find that it becomes so difficult to implement and fulfil what we so easily agreed to do in national conferences and committees. The gulf that separates thought and action, policy and practice, is not of basic principles but of working details. It is one thing to agree on principles at national level but it is another thing to work out the small details to suit every regional requirement. The implementation of the present programme also bristles with variety of problems. Each State or union territory will have its own specific difficulties according to its existing structure, local conditions and available facilities regarding adequate funds, equipment and trained teachers.

But these difficulties are in no way unsurmountable. The challenge can be met. To overcome the odds one should have a thorough knowledge of the surrounding factors, that cause the difficulties and put hurdles in the way of implementation. Every detail is important and every facet attracts attentions. Priority among priorities needs sorting out, massive action needs phasing. Then the magnitude and complexity of the task become manageable.

Apart from general principles, no formulae can be devised for working out the details. Nevertheless, the following suggestions may prove helpful :—

1. Only those schools should be upgraded which can conveniently provide for adequate library, laboratory and work-experience facilities. Attempts to upgrade all schools should not be made.

2. A school with poor performance should not be upgraded. The past performance of the school should be taken into consideration.

3. While upgrading schools, care should be taken that such schools are evenly distributed in the locality.

4. Teachers for work-experience will be absolutely necessary. In view of the difficulty of having trained persons who can impart the necessary skill, it may be necessary to restrict the type of work-experience to be provided in schools.

5. Care must be taken to ensure that work-experience provided is regarded as an integral part of education and not an appendage which has to be shunned as early as possible.

6. Teachers teaching classes XI and XII in both academic and vocational courses will have to be upgraded in their content knowledge by organising in-service courses wherever necessary.

7. Facilities for independent study will have to be provided in the school by having spacious reading rooms.

8. As far as possible, the upper classes, *viz.*, XI and XII should form a part of the secondary school system and not established as a separate unit.

9. The courses of studies followed in classes VI to VIII will have to be suitably integrated with those in classes IX and X so that there is no overlapping in subject areas. Continuity is considered essential.

10. Facilities for providing vocational guidance should be made available.

11. Care should be taken to introduce those vocational courses for which job opportunities are available in the neighbouring areas.

12. Students who wish to change their stream of courses may be allowed to do so within six months of the start of the academic session.

13. Co-ordinate committees may be set up to bring about better co-ordination between general education and technical education.

14. It may be necessary to have a working arrangement with the existing vocational institutions and industries to secure the services of qualified personnel for some time to impart training in the schools.

15. Suitable textbooks and teaching materials should be made available.

16. It should be ensured that the service conditions of existing staff are not adversely affected. Adequate safeguards should be provided.

17. Surplus staff, if any, may be re-oriented for teaching new subject areas wherever possible.

18. Wherever possible, facilities may be provided in classes XI and XII to enable the students to prepare and pass an examination

in only one or more subjects at one time. This will enable the student to pursue the study of only that subject in which he is interested rather than being forced to take a group of subjects. This will reduce wastage and stagnation.

19. The requirements of the pre-professional course may be adequately taking care of in the new curriculum for classes XI and XII so that class XII examination should uniformly be the minimum qualification for admission to different professional courses of university level, such as engineering, architecture, medicine, agriculture, veterinary science, etc.

Here is a big challenge before us and we must meet it. We find no better choice to quote the most inspiring and hortative lines from the inaugural address of Prof. S. Nur-ul Hasan, Union Minister of Education, Social Welfare and Culture delivered to the 36th Session of the Central Advisory Board of Education :

"One cannot, therefore, help feeling that here is a rare opportunity to make another big spurt in national development in all sectors, and especially in education. As I have said, such opportunities come only infrequently in the history of a nation. Can we really afford to miss it, I would like to ask ? May be, we might allow it to slip between our fingers and get away with it. May be, the Indian child, bright and intelligent as any in the world, but neglected and deprived for centuries on end, may still not lose patience. But I am sure, history will never forgive us if we fail in our duty at this stage.

It is this sense of urgency, this feeling that we have made a second tryst with destiny, that makes me bold enough to commend to you this blueprint of educational development in the Fifth Plan, despite the possible charges of ambition or unrealism that might be levelled by some. I cannot escape the feeling that we are face to face with a great occasion in our history. We cannot afford, at this juncture, to think small and to act weakly or falteringly. This is a time for a broad vision, a comprehensive and integrated plan, and vigorous and sustained action. These things are certainly not beyond us, if we can only muster the necessary faith and will.

I believe we can. With all the emphasis at my command, therefore, I would submit that it is both our duty and privilege to rise to the occasion and to measure up to the challenge which now faces education in the country. It is a challenge to all of us in our own diverse ways. The Governments, both at the Centre and in the States, have to have the courage and the conviction to take bold decisions, to raise the resources required, and to implement agreed policies firmly and in a sustained manner. The academic community of teachers and students has even a greater challenge to face. In this twentyfifth year of Independence, they must rededicate themselves to the pursuit of truth and excellence and service of the country.

They have not only to set their own house in order, but to create a wave of reform within the educational system which will, sooner rather than later, radiate to all other sectors of society. The Education Departments have the great responsibility of acting as catalysing agents in the entire process and the people as a whole have to support the movement with all that they can afford."

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